## ARTHERT OF COMMERCE

Rivers, American

P. W. Reichelderfer, Chie

# MONTHLY

# WEATHER REVIEW

TEBRUARY 1944

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#### COMBECTION

Morrana Wairram Rovan, May 1040, val. 71: page 72 and 73, stud alogo at Windold, Ence., 20.7, http://doi. 1042, should be 28.6, May 20, 1943.

# MONTHLY WEATHER REVIEW

Editor, EDGAR W. WOOLARD

Vol. 72, No. 2 W. B. No. 1406

FEBRUARY 1944

CLOSED APRIL 5, 1944 ISSUED MAY 5, 1944

#### METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR FEBRUARY 1944

[Climate and Crop Weather Division, J B. KINCER, in charge]

AEROLOGICAL OBSERVATIONS

NOTICE.—RAOB tabular data for January 1944 (table 1) are shown hereunder: those for February 1944 will be published in the March Review.—EDITOR

Table 1.—Mean free-air barometric pressure in millibars, temperature in degrees centigrade, and relative humidities in percent, obtained by radiosondes during January 1944

STATIONS AND ELEVATIONS IN METERS ABOVE SEA LEVEL

		Alban;	y, N. Y		Albu	querq (162	ue, N. 0 m.)	Mex.	A		icola, F m.)	la.		Atlan (30	ta, Ga.: 0 m.)			Big 81	oring, T	ex.	Bi	smarel (50	k, N. D 5 m.)	ak.			, Idaho 8 m.)	10.19
Altitude (meters) m. s. l.	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative bu-
Surface 500 1,000 1,000 1,500 2,600 2,600 2,500 3,000 4,000 6,000 7,000 8,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000 11,000	31 31 31 31 31 31 31 31 31 31 31 31 29 27 26 21 15	1, 008 957 898 842 790 740 694 608 532 464 402 348 299 256 220 188 161 138 119	-4. 9 -3. 9 -5. 9 -6. 7 -7. 4 -9. 2 -11. 3 -16. 1 -22. 3 -28. 9 -35. 3 -42. 3 -42. 3 -48. 2 -52. 4 -52. 6 -57. 6	77 74 76 67 56 51 45 40 41 44 49	31 31 31 31 31 30 30 28 20 12 5	840 801 753 706 622 546 478 416 361 313 271 229	-0. 2 0. 1 -1. 1 -3. 4 -9. 0 -15. 1 -22. 0 -29. 3 -36. 2 -42. 8 -49. 2 -55. 0	65 52 45 45 42 40 34 36	31 31 31 31 31 31 30 30 30 30 30 30 29 23 20 18 10 5	1, 021 962 906 854 803 755 710 627 553 485 425 370 321 278 239 204 174 148 126	11. 0 11. 7 10. 2 8. 9 7. 3 5. 7 -2. 0 -7. 7 -14. 2 -21. 2 -28. 1 -35. 3 -42. 8 -50. 0 -56. 2 -60. 2 -60. 2 -63. 8	82 59 54 44 38 33 34 32 34 39 44 47 45	31 31 31 31 31 31 31 31 32 28 28 28 28 22 23 21 18 10	986 962 906 852 801 753 708 624 549 481 419 365 316 273 235 201 172	5. 8 6. 3 8. 4 4. 6 3. 7 2. 2 20. 1 -5. 7 -11. 9 -18. 1 -24. 7 -32. 0 -39. 4 -46. 1 -52. 2 -57. 4 -58. 5	74 73 69 64 59 55 54 53 50 48 48 49 51	31 31 31 31 31 31 31 31 29 28 28 27 21 10	931 906 853 802 754 708 624 550 482 420 365 317 233	4. 9 7. 9 6. 7 4. 7 3. 2 0. 6 -5. 1 -11. 5 -18. 6 -26. 2 -34. 1 -41. 1 -48. 0 -54. 8	52 42 36 30 28 26 34 35 38 43	31 31 31 31 31 31 31 30 28 25 17 9 5	957 900 844 792 743 696 611 534 467 405 352 305 261	-6.0 -3.1 -3.3 -5.0 -7.4 -9.9 -15.1 -21.3 -28.5 -34.5 -40.8 -40.8 -46.4 -52.1	80 76 70 64 60 58 53 53 53 51	31 31 31 31 31 31 31 32 27 24 20 16 14 7	922 907 852 800 751 704 619 542 473 412 357 307 265 228	-3.9 -1.9 -1.8 -2.8 -4.6 -6.9 -12.8 -19.1 -26.3 -33.0 -39.2 -45.7 -50.0 -54.5	7. 5. 4. 5. 4. 5. 5. 5. 5. 5. 5.
	В		ville, To m.)	ex.		Buffale (22)	o, N. Y		(	Caribo	u, Main l m.)	ie	c		on, S. ( m.)	D,8			er, Colo 16 m.)		1	Detroit (217	, Mich.		Do	odge C	ity, Ka 7 m.)	ins.
Altitude (meters) m. s. l.	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative bu-
Surface 500 1,000 1,000 2,000 2,500 3,000 4,000 6,000 7,000 8,000 11,000 11,000 12,000 13,000 14,000 15,000	31 31 31 31 31 31 31 31 31 31 31 31 31 3	1, 019 962 906 854 804 756 712 629 554 487 426 371 322 279 240 205	14. 2 14. 0 12. 5 10. 8 9. 8 7. 7 5. 3 -0. 9 -7. 2 -13. 8 -20. 8 -27. 8 -35. 0 -42. 3 -50. 0	85 71 60 51 34 26 23 29 28 29 37 43 43	29 29 29 29 29 29 29 28 28 28 26 19 10	992 958 899 844 791 742 695 609 533 464 404 350 306	-2.0 -2.7 -5.0 -6.2 -7.6 -9.2 -11.5 -16.7 -22.7 -22.7 -22.3 5.3 -40.7 -45.2	77 74 76 70 58 51 52 49 49 46 41	31 31 31 31 31 31 31 31 31 28 20 19 17 12 9	991 953 893 893 784 735 688 602 525 456 396 342 293 251 214 183	-10.8 -9.1 -9.3 -10.4 -11.4 -11.3 -20.5 -26.7 -33.1 -39.1 -45.5 -50.7 -51.9 -49.6	86 80 71 62 55 45 46 40 41 49	27 27 27 27 27 27 27 27 26 26 25 25 22 23 23 23 23 26 27 27 27 27 27 27 27 27 27 27 27 27 27	1, 020 962 905 852 801 753 708 624 549 481 366 318 274 235 200 171	8. 1 10. 3 8. 0 6. 3 4. 3 2. 5 0. 3 -4. 7 -11. 1 -17. 6 -24. 3 -31. 2 -38. 5 -52. 2 -58. 3 -59. 8	81 67 66 61 58 51 50 49 50 50 46	31 31 31 31 31 31 31 30 27 23 9	799 750 704 619 542 474 412 356 308 209	-3.9 0.1 -2.6 -5.6 -12.2 -18.6 -25.3 -32.2 -39.6 -46.5 -51.8	62 44 42 43 45 46 50 48					31 31 31 31 31 31 30 30 30 30 21 20 17 16 13 8	928 904 850 798 750 704 620 544 476 414 350 265 226 194 166 142 121 104	-1.5 2.6 3.1 1.3 -0.9 -3.5 -9.0 -15.6 -22.8 -30.0 -37.4 -44.9 -52.5 -57.0 -58.0 -58.1 -58.9 -61.5 -63.3	80 64 44 32 33 33 33 31 31 31 41

See footnotes at end of table.

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Table 1.—Mean free-air barometric pressure in millibars, temperature in degrees centigrade, and relative humidities in percent, obtained by radiosondes during January 1944—Continued

		El Pa (1,1	so, Tex. 95 m.)			Ely, (1,90	Nev.1 8 m.)		0	Hasgov (648	m.)	t.	Gı		alls, Mo 28 m.)	nt.	G	reensb 273	oro, N.	C.	1	Hatter 3	as, N. C m.)	2.	Hu	ntingt (17:	on, W. 2 m.)	Va-
Altitude (meters) m. s. l.	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob-	-Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-
Burface	31	885	4.3	49	30	811	-9.1	83	31	940	-5.2	73	31	886	0.9	-	31	989 961	2.2	83 67	29 29	1, 020 960	5.8	88		1, 001 961	-0.2 2.0	-
,000 ,500 ,500 ,000 ,000 ,000 ,000 ,000	31 31 31 31 31 31 31 31 30 26 18	854 802 754 709 625 549 481 420 365 316 275 236	7. 3 5. 0 2. 5 0. 0 -5. 8 -12. 3 -18. 8 -26. 3 -33. 2 -39. 6 -46. 0 -53. 0	38 36 38 35 32 30 29 32 37	30 30 30 30 30 30 28 27 23 22 20 17 15 14 13 9 6	802 752 706 620 544 476 413 359 310 268 230 196 168 143 122 105	-6. 5 -4. 2 -5. 5 -10. 9 -17. 5 -24. 0 -31. 7 -38. 6 -50. 7 -56. 2 -57. 6 -58. 4 -60. 7 -63. 2	81 72 67 61 59 84 80 37	31 31 31 31 31 30 30 30 29 28 27 22 18 7	900 845 794 745 698 613 536 468 406 350 302 222 190 160	0. 1 -0. 5 -3. 4 -6. 5 -9. 3 -15. 1 -21. 0 -28. 0 -35. 1 -43. 0 -49. 7 -56. 3 -55. 6 -58. 4	60 47 52 55 53 47 49 54 58	31 31 31 31 30 30 30 27 21 16	847 795 746 700 614 538 469 407 352 306 264	1. 3 -2. 0 -5. 2 -8. 1 -13. 8 -20. 7 -27. 8 -35. 0 -41. 5 -47. 2 -52. 8	38 42 44 42 38 36 38	31 31 31 31 31 31 31 30 30 30 29 26 23 22 18 12	904 850 798 750 704 620 544 476 414 359 310 267 229 196 167 142 121 103	3. 4 2. 0 0. 6 -1. 3 -3. 5 -8. 6 -15. 0 -21. 7 -28. 8 -35. 5 -42. 3 -42. 3 -48. 9 -58. 4 -60. 0 -62. 1	67 56 40 41 40 35 33 37 43 49	29 29 29 29 29 27 27 27 26 26 26 26 24 23 22 19 14 10	960 904 850 799 750 705 621 545 477 416 361 312 268 230 197 168 143 121 104 88 75	6. 1 5. 4 3. 3 1. 4 -0. 6 -2. 3 -7. 9 -14. 5 -21. 1 -27. 7 -34. 3 -41. 3 -57. 5 -57. 8 -59. 6 -61. 9 -64. 7 -65. 2	59 54 49 40 37 36 34 38 44 47 53	26 26 26 26 26 26 26 26 26 26 25 25 24 17 11 5	903 849 797 747 701 617 541 473 412 357 308 265 227 194 166	2.0 0.4 -1.2 -2.8 -4.1 -5.9 -10.6 -17.0 -24.0 -31.2 -38.1 -44.6 -51.0 -55.9 -55.9	
18,000			onal F			Jolie	t, Ill.	1****	L		arles, I	a.	La	kehur	st, N.	<b>J</b> ,1	]		Rock, A	rk		Louisv	rille, Ky	·.	1	Mazat	an, Me	ex.
Altitude	4	Minn.	(343 m.	T.	-q0 g	(178		÷n	-qo	(5	m.)	-0.	-qo	-	m.)	·n	-qo		m.)	n-n	-qo	,,,,	6 m.)	n-	op.	(80	m.)	10
(meters) m. s. l.	Number of o	Pressure	Temperature	Relative hu	Number of c	Pressure	Temperature	00	Number of servations	Pressure	Temperature	Relative hu-	Number of observations	Pressure	Temperature	Relative hu-	Number of ol servations	Pressure	Temperature	Relative hu-		Pressure	Temperature	Relative hu-	Number of servations	Pressure	Temperature	Relative hu-
surface 500 1,000 1,000 1,000 1,000 1,500 1,000	30 30 30 30 30 30 30 20 29 27 21 11 10 8 6	974 954 896 840 787 738 692 006 529 461 400 346 297 254 217 185	-8.6 -7.9 -7.3 -7.1 -7.8 -9.6 -12.2 -17.6 -24.1 -30.5 -37.4 -43.5 -48.6 -53.2 -53.2	82 77 65 59 52 47 48 47 38	31 31 31 31 31 31 31 31 30 29 23 17 8 5	999 959 901 846 794 614 538 469 408 354 306 267 231	-2. 4 -0. 3 -1. 7 -2. 0 -3. 7 -5. 6 -7. 5 -12. 8 -18. 9 -25. 3 -32. 5 -39. 2 -45. 7 -51. 0 -56. 2	81 68 61 48 43 42 36 25 29 32 36	31 31 31 31 31 31 31 31 31 30 30 30 29 12 7 5	1021 962 906 853 802 755 710 626 550 482 422 367 318 203 173 149	9. 6 10. 5 9. 0 7. 8 6. 3 4. 2 1. 7 -4. 1 -10. 5 -16. 8 -23. 5 -30. 0 -37. 1 -43. 8 -50. 5 -55. 2 -55. 3 -58. 6	86 71 62 59 49 43 39 31 31 37 42 48 52	23 23 22 22 22 22 21 21 20 19 18 16 16 15 14 12 9 9	1, 014 956 898 843 791 742 696 610 535 466 404 350 302 228 222 190 162 138 118	-1. 2 -1. 9 -3. 1 -4. 0 -5. 8 -7. 4 -9. 7 -14. 5 -20. 5 -27. 4 -34. 4 -41. 3 -47. 6 -52. 3 -55. 2 -56. 1 -57. 0	75 68 61 56 55 45 47 50 54 57	31 31 31 31 31 31 31 31 31 31 31 31 31 3	I, 012 962 905 852 800 752 706 622 547 479 418 362 313 270	5. 5 6. 4 4. 8 3. 6 6 2. 2 2 0. 5 -1. 3 1 -20. 1 1 -27. 3 -34. 3 -41. 6 -47. 8	777 566 56 54 48 45 38 36 45 52	30 30 30 30 30 30 30 30 28 28 27 25 23 15 5	1, 002 962 904 850 797 749 703 618 543 475 414 360 312 268	2. 2 2. 5 0. 7 0. 2 -1. 0 -2. 7 -4. 3 -9. 2 -15. 9 -22. 7 -29. 3 -36. 2 -42. 2 -47. 3	72 64 59 49 42 36 32 31 34 44 51	25 25 25 25 25 25 25 23 23 23 22 20 20 18 18 18 18 18 18 18	1, 008 960 906 854 805 758 714 631 556 489 428 373 324 280 241 206 149 127 108 91	20. 4 20. 9 19. 1 16. 1 12. 5 9. 9 6. 8 1. 0 -5. 7 -12. 4 -19. 2 -26. 9 -34. 1 -42. 3 -50. 0 -56. 4 -61. 1 -63. 7 -66. 6 -68. 5 -69. 6	
c	N		rd, Oreg	1,0		Miarr (4	i, Fla. <sup>3</sup> m.)		N		le, Ten	n.			lk, Va.				nd, Cali	f.			n, Utah 55 m.)		Okla		City, (	Okl
Altitude (meters) m. s. l.	Number of ob-	Pressure	Temperature	Relative bu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-
Surface	31 31 31 31 31 31 30 30 29 29 28 27 25 23 20 17 12 5	971 960 903 849 798 749 703 618 542 473 411 356 307 263 225 192 163 140 118	4. 5 4. 9 4. 5 2. 4 -0. 4 -3. 2 -6. 0 -11. 8 -25. 1 -31. 8 -39. 3 -46. 2 -52. 2 -56. 5 -57. 1 -56. 5 -57. 1 -55. 0	77 75 65 62 62 62 58 52 51 49 43	31 31 31 31 31 31 31 30 30 30 30 29 29 27 27 27 22 21 13 9	1, 020 963 908 855 758 713 630 556 489 429 374 324 281 242 207 177 150 127 108 92	16. 2 15. 7 13. 4 11. 1 10. 0 8. 2 5. 9 0. 7 -4. 8 -11. 1 -18. 3 -25. 6 -33. 5 -41. 2 -49. 1 -56. 3 -61. 6 -65. 4 -67. 9 -70. 4	85 80 74 68 51 41 35 32 27 27 28 29	31 31 31 31 31 31 31 31 31 31 31 31 31 3	1, 000 962 905 850 799 751 705 621 546 478 416 361 312 270 234	4. 1 5. 1 3. 4 2. 5 1. 3 -0. 3 -2. 0 -7. 5 -13. 5 -20. 7 -20. 7 -27. 8 -34. 7 -41. 0 -53. 9	73 58 53 47 44 40 41 40 41 48 51 53	30 30 30 30 30 29 28 28 26 24 23	1, 021 960 903 850 798 749 703 619 543 475 413	5. 1 4. 6 3. 4 1. 7 0. 0 -1. 6 -4. 0 -9. 6 -16. 2 -23. 2 -30. 3	74 61 53 48 37 28 22 22 22 34 40 58	31 31 31 31 31 31 31 31 30 29 29 28 27 24 21 14 12 8 6	1, 020 960 904 851 799 751 706 621 545 477 415 360 312 268 229 196 167 143 122 103	9. 7 9. 0 6. 9 4. 5 2. 0 -0. 6 -3. 1 -9. 2 -22. 1 -29. 0 -36. 0 -43. 0 -50. 4 -56. 2 -57. 6 -59. 0 -58. 7 -61. 0 -62. 2	79 66 57 55 49 47 45 42 44 46 43	31 31 31 31 31 31 31 31 31 31 29 28 27 26 24 22 21 12	869 854 801 751 704 618 542 472 410 355 305 263 226 192 140 119 102	-7. 3 -5. 5 -4. 9 -6. 2 -8. 3 -13. 7 -26. 6 -34. 1 -41. 4 -47. 7 -52. 4 -56. 7 -56. 6 -57. 8 -59. 2 -61. 1	90 83 61 57 57 51 44 43 39	29 29 29 29 29 29 29 29 25 25 25 24 23 17 13 6	975 961 905 851 800 752 706 623 547 479 418 362 313 270 232 196	3. 1 5. 1 6. 2 5. 0 3. 4 4. 0. 9 -6. 5 -13. 0 -20. 1 -27. 6 -49. 3 -42. 6 -49. 3 -55. 9 -56. 3	

See footnotes at end of table.

Table 1.—Mean free-air barometric pressure in millibars, temperature in degrees centigrade, and relative humidities in percent, obtained by radiosondes during January 1944—Continued

	T	O	maha, N				Phoeni (336	-			Pitt	_	gh, P		1944-	ortlar		Maine	1	Ra		ity, 8.	Dak.	1	81	t. Lou (171	is, Mo.	
Altitude (meters) m. s. l.	Number of ob-	servations	Tressure		Relative hu- midity	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob-	Servations	Omesary	Temperature	Relative hu-	Number of ob- servations	Pressure		Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob-	servations	Pressure	Temperature	Relative hu- midity
Surface	33 33 33 22 22 22 22 22 22 22 22 22 22 2	0 9 0 9 0 8 0 7 0 7 9 7 9 6 9 5 9 4 9 4 8 3 4 3	85	.5 .2 .2 .8 .3 .1 .5 .7 .0	72 66 54 44 38 33 33 40 40 41 44	31 31 31 31 31 31 31 31 31 31 31 31 31 3	979 961 905 852 801 753 708 624 548 480 418 363 314 270 232 2198 169 144 123 104 89	8. 7 12. 8 11. 6 7. 8 4. 8 1. 5 -6. 7 -13. 2 -20. 3 -27. 5 -34. 8 -42. 1 -49. 2 -55. 0 -57. 7 -58. 8 -61. 8 -63. 5	7 58 3 9 3 8 3 5 3 6 3 7 3 8 3 8 3 8 3 8 3 9	8 9 9 3 5 5 8 8 7 7 4 4 3 3 1 4	31 99 31 99 31 93 31 83 31 7 31 7 31 6 31 6 31 5 31 5 31 4 4 4 31 4 31 31 32 328 329 320 20	46 94 45 99 114 338 69 08 53 64	0. 1 0. 3 -1. 6 -3. 2 -5. 1 -6. 6 -8. 4 -13. 1 -18. 6 -25. 5 -32. 3 -39. 3 -45. 1 -51. 2 -56. 3	76 74 69 64 61 53 42 43 38 39 44		1, 013 958 800 840 788 738 692 600 461 400 345 297 254 218 186		-6. 0 -5. 0 -6. 2 -7. 1 -8. 4 -9. 9 11. 7 123. 6 30. 2 36. 8 148. 7 50. 8 51. 1 50. 6	83 80 77 70 66 63 60 57 54 53 49	31 31 31 31 31 31 31 31 31 31 31 31 31 3	904 902 848 796 747 700 615 539 470 408 353 305 262 224 191 163 140	-3.7 -3.1 -0.1 -2.7 -5.8 -8.0 -13.8 -20.3 -27.1 -34.1 -41.7 -48.4 -59.8 -59.8 -60.3	69 47 46 5 45 9 43 8 41 8 42 47 51		31 1, 31 31 31 31 31 31 31 31 328 228 224 223 223 18 10 5	310 -	1. 4 2. 2 1. 0 0. 6 -1. 2 -2. 8 -4. 6 -9. 6 -15. 8 -21. 9 -29. 2 -36. 6 -43. 2 -48. 9 -55. 1	75 60 53 44 41 37 28 26 35 43 45
			ul, Min 25 m.)	n.	8		tonio, ' 2 m.)	Tex.	Sa		go, Cal m.)	if.1	"		an, P. 1 5 m.)	R.	81		Maria, 73 m.)		1		te Mari (221 m.	)			e, Wasl 2 m.)	1.1
Altitude (meters) m. s. l.	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu- midity	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-
Surface	30 30 30 30 30 30 30 30 30 30 29 27 25 18 8	992 958 899 844 792 742 696 610 535 466 404 350 304 263	-5.7 -7.6 -9.7 -15.1 -21.7 -28.2 -35.4 -42.6 -47.9	78 74 60 53 50 44 40 40 39 40	29 29 29 29 29 29 29 28 28 27 27 26 26 25 19	992 962 906 853 802 755 710 626 551 484 423 368 319 276 237	9. 0 10. 6 8. 7 7, 9 6. 4 4, 7 2. 2 -3. 5 -9. 9 -16. 3 -23. 4 -30. 2 -37. 4 -44. 5	72 71 62 46 35 35 32 28 31 39 248	26 1 26 25 25 25 25 25 24 23 20 19 17	, 016 960 904 851 801 753 708 624 549 480 420	13. 6 12. 2 9. 6 6. 9 4. 4 2. 5 -0. 1 -6. 2 -12. 6 -19. 8 -26. 7	59 57 52 40 30 34	28 28 28 28 28 28 27 26	1, 016 961 907 856 806 806 714 633 558 491 431 377 328 284 245 211 180 153 130 111 93 78	23. 5 20. 4 17. 2 14. 3 11. 9 9. 8 7. 6 3. 5 -2. 4 -8. 7 -15. 6 -23. 1 -30. 4 -37. 7 -45. 1 -52. 2 -68. 4 -71. 4 -74. 6 -73. 5	83 81 80 74 62 42 28	29 29 29 29 29 29 29 27 27 27 27 26 26 25 20 20 18 14 10 7	1, 011 961 905 852 800 752 707 623 548 480 363 314 2700 231 198 160 144 123 105 89 78	11. 8. 6. 3. 1. -0. -12. -20. -27. -34. -42. -49. -55. -57. -58. -60. -62. -63.	2 57 9 51 2 48 7 40 5 37 8 33 7 29 8 33 1 35 1 4 38 9 41 3 3 0 9 9 6 6 8	30 30 30 30 30 30 30 30 29 27 27 26 20 11 7	989 955 896 840 788 691 605 529 460 398 346 300 259	-4. 1 -4. 9 -6. 4 -7. 7 -9. 2 -11. 0 -13. 3 -18. 8 -25. 0 -31. 9 -38. 7 -43. 2 -48. 1 -54. 6	88 87 83 78 72 67 64 58 54 51 45	15 15 15 15 15 15 14 14 14 13 12 11 10 9 7 7 7 6 6 5	1, 014 957 900 846 794 746 609 614 537 468 352 302 229 222 189 160	-13 (-69.) -15212833. (-42.) -425559. (-60.	61 59 58 58 57 63 64 64 62
	8	poka (50	ne, Was	h.		West	Island Indies m.)	,	T		ya, Me 6 m.)	x.			oa, Fla. m.)		Т		hula, N 15 m.)	fex.	Tate		land, W m.)	ash.			io, Ohi	0
Altitude (meters) m. s. l.	Number of ob-	Pressure	Temperature	Relativz hu-	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	o A	Number of ob-	Pressure	Temperature	Relative hu-	Number of ob- servations	Pressure	Temperature	Relative hu-	Number of ob-	Pressure	Temperature	Relative hu-
Surface	31 31 31 31 31 31 31 31 31 31 31 29 25 21 12	949 903 848 796 747 701 615 538 470 408 353 305 261 223	-1. 3 -0. 1 -1. 5 -3. 7 -6. 2 -8. 7 -14. 5 -20. 4 -27. 0 -34. 2 -40. 3 -47. 0 -52. 6 -57. 6	87 72 58 51 49 47 51 50 51	29 29 29 29 29 29 28 26 25 24 24 23 21 10 18 17 15 15 11 6	1, 016 961 907 855 805 758 714 632 558 492 432 378 328 286 216 212 181 154 131 111 93 79 66	24. 2 20. 6 17. 1 14. 2 12. 0 10. 2 8. 6 4. 3 -1. 7 -7. 6 -14. 3 -21. 7 -29. 9 -37. 9 -59. 6 -64. 5 -68. 8 -71. 7 -74. 2 -75. 7	82 81 77 65 52 40 19 20	31 31 31 31 31 31 30 28 27 27 26 24 23 20 17 15 9	430 376 326 283 244 209 178 152 128 109	13. 4  12. 7  9. 8  2. 3  -10. 0  -16. 5  -23. 2  -31. 1  -39. 1  -47. 3  -55. 5  -61. 8  -66. 7  -69. 0  -71. 7  -73. 2	43 44 53 43 43 43 32 35 38	31 31 31 31 31 31 31 31 31 31 31 31 31 3	1, 021 963 907 855 804 757 712 629 554 486 426 371 322 279 240 205 1176 149 126 107 91 77 65	13. 4 13. 7 11. 9 10. 1 8. 4 6. 7 4. 4 -1. 0 -6. 6 -12. 9 -20. 1 -27. 1 -34. 3 -42. 1 -50. 0 -66. 9 -69. 2 -71. 6 -72. 4 -72. 0	83 66 58 48 39 27 22 22 26 27 29 32 37	31 31 31 31 31 31 31 30 30 28 28 28 26 22 13 12 9	9999 956 903 852 803 757 713 632 558 492 236 246 241 181 154 130 110 93 78	23. 20. 18. 15. 12. 10. 4. -1. -7. -14. -21. -29. -37. -46. -53. -60. -71. -75. -77. -77.	22 68 9 63 0 68 1 70 8 62 4 50 6 33 3 26 6 24 4 25 8 6 8 7 8 8	31 31 31 31 31 31 30 29 29 29 28 28 28 26 21 9 7	1, 012 955 898 844 792 744 608 612 537 468 407 352 304 261 223 190 162 139 119	6. 8 5. 3 2. 1 -0. 5 -2. 8 -5. 2 -7. 9 -13. 7 -20. 1 -26. 7 -33. 0 -40. 4 -47. 6 -53. 6 -58. 2 -57. 5 -55. 6 -56. 4	80 69 72 73 65 63 60 53 50 51 50	28 28 28 28 28 28 28 28 27 27 27 26 25 21 14 8 6 5	997 959 901 846 793 744 608 612 536 406 351 303 262 222 188 162	-1.6 -0.8 -3.3 -4.0 -5.8 -7.3 -9.3 -14.2 -20.7 -20.7 -41.1 -55.3 -54.0 -54.2	72 71 63 57 44 43 39 38 38

Table 1.—Mean free-air barometric pressure in millibars, temperature in degrees centigrade, and relative humidities in percent, obtained by radiosondes during January 1944—Continued

		Stat	ions and el	evations	in meters	above s	ea level				Stati	ons and ele	vations i	n meters	above se	ea level	
Altitude	Te		oint, Orego l m.)	n i			gton, D. C 3 m.)		Altitude	To		int, Orego l m.)	n 1			gton, D. C 5 m.)	
Rurface	Num- ber of obser- vations	Pres- sure	Temper- ature	Rela- tive humid- ity	Num- ber of obser- vations	Pres- sure	Temper- ature	Rein- tive humid- ity	(meters) m. s. l.	Num- ber of obser- vations	Pres- sure	Temper- ature	Rela- tive humid- ity	Num- ber of obser- vations	Pres- sure	Temper- ature	Rela- tive humid- ity
666	15 15 15 15 15 16 16 16 14	1, 016 958 902 847 795 747 700 615	6. 4 5. 0 2. 1 -0. 5 -3. 1 -5. 8 -8. 4 -14. 3 -21, 1	75 61 61 63 55 49 46 44	31 31 31 31 31 31 31 28 28	1, 018 960 902 848 796 746 700 615 539	2.0 1.5 -0.3 -1.9 -3.5 -4.6 -6.6 -11.8	72 69 68 67 61 49 45 44	6,000	13 12 7 7 7 7 5	469 408 350 301 257 220	-27.9 -34.0 -44.3 -51.5 -56.8 -57.1	56 62	28 28 28 28 28 26 18 12 9	471 410 355 306 263 226 193 165 142	-24.9 -31.8 -38.6 -44.9 -50.4 -53.7 -54.7 -55.1	55 51 48

U. S. Navy.
 Humidity data obtained by hair hygrometer, stations not so indicated, using electric

hygrometer.
Station moved to Toledo, Ohio.

NOTE.—All observations were taken near 11 p. m., E. S. T. "Number of observations" refers to pressure only as temperature and humidity data are sometimes missing for some observations at certain levels. Relative humidity data are not used in daily observations when the temperature is below  $-40^{\circ}$  C.

None of the means included in these tables are based on less than 15 surface or 5 stand, ard-level observations.

Means for observations obtained by the electric hygrometer have been adjusted to compensate for the values occurring below the operating range of the humidity element.

Charts VIII, IX, X, and XI, for January data appeared in the January 1944 issue of the Monthly Weather Review.

TABLE 2.—Free-air resultant winds based on pilot-balloon observations made near 5 p. m. (75th meridian time) during February 1944.

		biler Tex. 38 m	ne,	Al que	buqu , N. ? ,630	ner- Mex. m.)	A	tlan Ga. 200 n			Mon Mon ,095 r	t.	N	smar . Da	k.		Boise Idah 870 n	0	vil	rown lle, T (7 m.	ex.	1	uffal N. Y 20 m			Vt.	gton, n.)	Ch (	s. C	ton,		Ohio 152 n	0		Colo 627 1		E (1,	Pas Tex. 196 r	80, m.)
Altitude (meters) m. s. l.	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity.	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Burface	28 25 21 20 18 17 17 11	228 248 260 247 256 257	2.4 4.5 7.7	29 29 29 24 19	244 242 247 256 256	3. 2 4. 6 5. 1 8. 3 13. 0 17. 2 18. 8	22 22 21 19 17 13 10	264 263 254 265 271 274 276 280	3. 4 3. 7 5. 2 8. 4 13. 8 16. 0 18. 3 24. 3		****		28	284 284 292 298 296 295 297 298	0. 4 3. 7 7. 7 9. 8 10. 6 12. 3 13. 3 14. 8 16. 9 15. 5	27 26 26 23 23 18 13	113 119 175 219 244 237 281 318	0.9 1.5 1.3 1.9 3.2 4.4 4.6 5.4	27 27 23 19 17 16 13 12 10	136 159 186 216 220 226 220 230 239	4. 4 3. 6 2. 8 0. 7 3. 3 6. 3 7. 7 11. 1 13. 4	25 25 20 11	249 247 256 280	3.9 5.8 8.4 8.9	28 28 25 22 17 13	235 227 263 272 284 291	1. 2 3. 7 7. 9 11. 5 14. 0 15. 6	1.541	277 257 274 287 289 291 284 286	1. 6 4. 7 7. 7 11. 5 14. 5 16. 7 17. 1 21. 6	28 28 25 22 14 13 11 10	272	1. 6 3. 7 4. 8 8. 6 13. 3 16. 9 18. 1 21. 4	28	312 260 268 268 268 262 263	2.2 4.7	28 28 26 25 23 19	260 257 241 245 250 254	4. 6. 8. 10. 16.
	E)	y, N	ev. m.)		Gran Ineti Cok ,413	).		eensl N. C 271 n	boro, ). n.)		Havr Mon 767 n	e, t. n.)	Ji vi	ackselle, l	on- Fla.	Jo (	oliet, 178 n	III. n.)	La	Nev 573 n	gas,	Ro (	Littl ck, 88 m	le Ark.	M	fedfe Ore 410 1	g.		Mian Fla (15 m			Mobi Ala [66 m		1	ashv Teni 194 n	a.	Ne	w Y N. Y 15 m	ork
Altitude (Meters) m. s. l.	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Burface	28 28 26 10		8 7	28 28 28 22 15	302 292 233 241 255	8. 1 2. 1 4. 1	22 22 22 3 20 5 16 13 0	270 277 256 272 270 283 292 290	1. 4 2. 7 4. 3 8. 3 11. 6 17. 3 19. 6 26. 6	28 28 27 28 22 19 11	282 267 278 277 285 292 297	2.4 3.8 6.8 9.2 12.2 12.1 11.9	28 28 26 26 26 22 20 19 18 14	201	1. 2 4. 1 6. 9 8. 7 9. 6 10. 4 12. 2 15. 4 18. 6	10	248 259 259 267 281 282 282	2. 4 4. 0 5. 8 9. 0 12. 0 13. 1 14. 1	23 20 18	144 224 254 255 259 266 270	3.0 6.6 9.0	24 24 23 22 19 18 17 14	246 231 268 277 281 277 279 264	1. 0 1. 7 3. 1 5. 0 8. 9 12. 3 15. 6 19. 6	27 27 27 27 27 27 27 23 17 14	306 298 208 228 247 277 338 346	0.8 0.9 0.7 2.8 3.2 3.7 4.7 6.5	29 29 28 27 26 26 25 23 21 18	143 148 212 241 279 272 275 276 276	3.6 2.9 1.8 2.2 2.8 3.6 5.2 8.0 11.4		228 226 245 274 286	1. 6 2. 9 3. 3 5. 1 6. 0	27 27 23 19 16 13 13 12 11	281 288 290 284	1.6 3.7 5.5 8.9 9.9 13.9 16.9 20.6 23.8	25 22 20 17 13	292	8. 11. 14.

Table 2.—Free-air resultant winds based on pilot-balloon observations made near 5 p. m. (75th meridian time) during February 1944. Directions given in degrees from North ( $N=360^{\circ}$ ,  $E=90^{\circ}$ ,  $S=180^{\circ}$ ,  $W=270^{\circ}$ ). Velocities in meters per second.

		akla Cali (8 m	1.	Ci	klahe ty, C 402 r	oma okla. n.)		Neb 306 n	r.	1	hoer Ariz 338 n		8	Rap City J. Di 982 r	k.		Mo 181 r			t. Pi Min 225 i	n.	to	lan Anio, 1	Tex.	1	n Di Cali (15 m	1.	13	ault Mari Micl 225 n	ie,		Seatt Was (12 m	h.		ooka Wasi 603 t	h.	to	ashi n, D (34 E	0, 0
Altitude (meters) m. s. l.	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	28 28 25 23 20 20 18 16 14 12	274 310 343 353 351 348 349 353 339 338	1. 4 1. 6 2. 6 3. 6 5. 7 8. 5 10. 4 15. 5 19. 3 21. 9	17 17 16 15 14		0.8 0.6 1.2 5.6 9.6 12.0 14.3 17.8 21.2 24.5	28 27 25 22 21 20 19 18	281 288 289 286 280 272	1. 0 1. 7 3. 6 6. 2 9. 0 11. 3 12. 7 16. 6 20. 1 24. 9	28 28 28 27 26 23 20 17	270	1.3 1.7 2.6 3.7 4.0 4.7 5.8 10.6 15.0 16.7	24 24 24 24 23 18 15	206 258 284 291 287 284 278	0.9	26 24 24 24 24 21 16	280 275 278	12. 1 14. 1 17. 3	29	286 297 296 292 306	1. 3 2. 4 3. 8 7. 6 9. 2 12. 1 14. 3 17. 2	18 16 14 13	29 55 229 259 267 266 263 264 256	0.8 3.2 5.4 9.4 14.0 16.5	24 21 18 18 18	237 227 199 195 318 312 305 288	2.7 2.6 2.3 1.2 2.3 4.5 6.8 8.7	24 24 21 17 12 10 10	271 283 301 297 304 303 310	3. 5 4. 4 6. 8 7. 0 8. 8 10. 5 13. 8	19 15 11	2 111 186 172 215 202	0.4 0.2 1.8 2.6 1.4 1.7	27 26 22 17 15 12	179 174 219 250 254 283 274	0.8 1.3 1.2 2.5 3.8 4.8 7.5	24 24 23 23 19 17 16 14 10	297 289 284 288 290 284 284	3. 6. 10. 13. 18.

#### LATE REPORT FOR JANUARY 1944

Table 2.—Free-air resultant winds based on pilot-balloon observations during January 1944. Directions given in degrees. Velocities in meters per second

		1 Pa Tex ,196			eens N. ( 271 r				1 Pa Tex ,196		75	N. C	
Altitude (meters) m. s. l.	Observations	Direction	Velocity	Observations	Direction	Velocity	Altitude (meters) m. s. l.	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	31 31 29	272 272 271	1.9	27 27 25 25 25 25	280 284 270 284 294	2.1 3.1 4.7 6.2 8.6	2,500 3,000 4,000 5,000 6,000	29 27 22 21 19		4.3 6.0 9.7 10.8 13.2	21 20 16	278 273 278	11. 0 12. 3 17. 1 18. 8 20. 9

Table 3.—Maximum free-air wind velocities, (m. p. s.). For different sections of the United States based on pilot-balloon observations during February 1944

		Surface	to 2,50	0 met	ters (m. s. 1.)		Above 2,	500 to 5,	000 n	neters (m. s. l.)		Abo	ve 5,000	mete	s (m. s. t.)
Section	Maximum ve-	Direc- tion	Altitude (m.) m. s. l.	Date	Station	Maximum ve-	Direc- tion	Altitude (m.) m. s, l.	Date	Station	Maximum ve-	Direc- tion	Altitude (m.) m. s. l.	Date	Station
Northeast 1 East-Central 2 Southeast 4 North-central 4 Central 5 South-Central 6 Northwest 7 West-Central 8 Southwest 5	41. 6 44. 5 38. 0 46. 0 51. 3 42. 0 38. 8 39. 5 34. 8	NW WSW SW WSW NW WNW	2, 500 2, 260 2, 189 1, 018 1, 168 2, 092 2, 500 2, 489 1, 563	24 15 17 4 5 21 6 4 9	Harrisburg, Pa Norfolk, Va Atlanta, Ga Milwaukee, Wis Joliet, Ill. Amarillo, Tex Glasgow, Mont Cheyenne, Wyo Las Vegas, Nev	54. 4 50. 2 50. 6 49. 2 49. 0 46. 8 45. 8 66. 0 64. 3	WNW NW WNW W NW W NW W	5,000 4,960 3,020 4,092 4,856 4,976 5,000 4,784 4,498	10 1 6 9 5 14 7 14 9	Caribou, Maine Norfolk, Va. Birmingham, Ala Marquette, Mich St. Louis, Mo. Tulsa, Okla. Great Falls, Mont Sacramento, Calif. El Paso, Tex.	70. 0 76. 8 53. 2 62. 0 68. 0 85. 5 68. 0 62. 0 75. 3	WNW WNW WNW W WSW W SW	7, 940 10, 759 11, 611 6, 400 6, 603 11, 781 6, 388 8, 897 9, 383	19 9 25 24 20 2 7 22 26	Portland, Maine. Nashville, Tenn. Jacksonville, Fla. Alpena, Mich. Goodland, Kans. Big Spring, Tex. Great Falls, Mont. Denver, Colo. El Paso, Tex.

Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.
 Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.
 South Carolina, Georgia, Florida, and Alabama.
 Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota.
 Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.

<sup>&</sup>lt;sup>6</sup> Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western

Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.
 Montana, Idaho, Washington, and Oregon.
 Wyoming, Colorado, Utah, northern Nevada, and northern California.
 Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

#### RIVER STAGES AND FLOODS

By C. R. JORDAN

PRECIPITATION during February was generally above normal from the Potomac, Ohio, and lower Missouri Valleys southward with the exception of the Florida Peninsula, and generally deficient in the northern part of the country. Monthly totals were 2 to 3 times the normal in the far Southwest including southern California.

Snow depths increased during February in New England and in the higher elevations of the West. Reductions occurred in the Lakes Region and in Pennsylvania. In the Northeast, depths at the end of February ranged from bare ground in southeastern New England to over 3 feet in extreme northwestern Maine and from much bare ground in southern and western New York to over 5 feet in the Adirondacks. There were only a few inches of snow in the mountains of west-central Pennsylvania. Some of the heavier amounts in the far West were 85 inches at Cumbres, Colo.; 63 inches at Silver Lake, Utah; 121 inches at Paradise Inn, Wash.; and 80 inches at Soda Springs, Calif.

Stream flow during February continued generally subnormal throughout the Western States but increased considerably in the Southeast and to a lesser extent in the Central and East-Central States. Floods occurred in the headwaters of the Cumberland River Basin where drought conditions existed during January, bankfull to medium flood stages were reached in the streams of North Carolina, and light flooding was reported at scattered points from the South Atlantic coast as far west as Texas and Oklahoma and northward to the Ohio River. Light flooding also occurred at a few places in Michigan, Minnesota, and Iowa, resulting for the most part from melted snow and ice.

St. Lawrence Drainage.—Mild weather near the end of February melted a considerable snow cover in central and southern Michigan and the accumulated waters produced substantial rises in the streams. The Red Cedar River reached stages slightly above bankfull at Williamston and East Lansing and near bankfull at several other points. Only limited areas of lowlands were submerged and no damage of consequence was reported.

Atlantic Slope and East Gulf of Mexico Drainage.— Beginning near the middle of February and continuing into March, moderate to heavy precipitation fell over the Southeastern States from the Ohio River southward to Florida. Storms were frequent and drought conditions that persisted in this area since last fall were considerably relieved. Six pronounced crest stages were recorded on the Chattahoochee River near Roswell, Ga., between February 9 and the end of the month, reflecting precipitation fron 10 separate storms. The extreme dry conditions that have been prevalent in the area for several months produced a large deficit of soil moisture and the soil was capable of retaining a great amount of water. This, in addition to the fact that most streams were at very low stages at the beginning of the stormy period, prevented serious flooding. Bankfull to moderate flood stages were reached on many streams as shown by the table at the end of this report. Some streams remained above flood stage at the end of the month and will be discussed further in a later report. No estimate of the damage caused by the floods in this area has been received

but it was undoubtedly small.

Upper Mississippi Basin.—Moderate rains over the Rock River Basin on February 26, augmented by the

spring breakup and water from melting snow, caused some light flooding on the lower Rock River. No damage resulted from this overflow.

Mild temperatures beginning on the 21st and extending to the end of the month caused sufficient snow-melt to produce rapid rises in the Root, Zumbro, Trempealeau, and lower Black Rivers near the end of February. Bankfull stage was reached at Theilman, Minn., on the Zumbro River on the 26th as a result of an ice gorge that formed at the mouth of the stream. Local flooding was reported on Wilson Creek at Menomonie, Wis., on the 26th. No damage was reported.

The Mississippi River exceeded flood stage slightly at Louisiana, Mo., several times during the month. The stages were produced by the operations of Dam No. 24 and no damage resulted.

Missouri Basin.—Rapid rises occurred in the Big Sioux and Floyd Rivers in Iowa beginning about February 26 and considerable overflow resulted. Damage was confined mostly to roads and fences and has been estimated at approximately \$1,000.

Ohio Basin.—Moderately heavy rainfall over West Virginia on February 22 caused rapid rises in the headwaters of the Monongahela River Basin and in the Little Kanawha River. Bank-full stages were just about reached at most stations and there was no serious overflow. Heaviest loss was in the vicinity of Dailey, W. Va., where damage to stacks of hay, highways and bridges, and water standing on prepared farm lands is estimated at \$3,750. The Little Kanawha River at Glenville, W. Va., rose 23.5 feet in less than 24 hours on February 22–23. The crest was 3 feet above flood stage at Glenville but no damage was reported.

Heavy rains over the headwaters of the Cumberland River Basin on the 17th and 18th caused severe flooding in the headwaters of the Cumberland. Two homes were destroyed and many families were forced to seek higher grounds. Flood stage was not reached in the lower river but later rains produced a second rise in the river beginning at the end of the month and continuing into March which will be discussed in the March Review. Damage figures have not yet been compiled. The Tennessee River was also above flood stage at Florence, Ala., from February 26 to March 5.

Arkansas Basin.—The Poteau and Petit Jean Rivers were slightly above flood stage during the month at Poteau, Okla., and Danville, Ark., respectively Only light flooding occurred and no damage was reported.

Red Basin.—The Ouachita River exceeded flood stage at Camden and Arkadelphia, Ark. Losses due to the suspension of business were estimated at \$500. Minor overflow also occurred at Naples, Tex., on the Sulphur River but no damage resulted.

West Gulf of Mexico Drainage.—The Trinity River at Liberty, Tex., was above flood stage from February 1-4 and from 16-20. Losses caused by both of these floods were estimated at \$1,000 for livestock and \$1,500 for suspension of business. Most of the losses are believed to have occurred during the first flood period

to have occurred during the first flood period
The Elm Fork, East Fork, Trinity, and Sabine Rivers
went out of banks at the end of February. A report of
these overflows will be included in the March report.

Pacific Slope Drainage.—Heavy precipitation, averaging from 6 to 7 inches over the Los Angeles metropolitan area to 13 to 17 inches or more in the mountain areas of southern California, began on February 21. Precipitation was in the form of snow at the higher elevations.

Flood peaks from the storm were not excessive because of moderate antecedent precipitation and the impounding of water at higher elevations by a heavy snow cover. Flooding was mostly of a local nature. The situation in Los Angeles was aggravated by the delay in the repair of power lines to private homes resulting from a strike. The Weather Bureau airport station at Burbank, Calif. gives the following summary of the storm damages:

Flood stages were reported in this district on February 22, 1944. The main part of the storm was in the San Fernando Valley and damage was done around Canoga Park. The water came up around houses and high school buildings, doing considerable damage. Some streets were washed out and some areas flooded. Portions of a railroad near Sepulveda had to be repaired and one man got caught in his car parked in a wash and was drowned.

In the upper Los Angeles River drainage area there was a local cloudburst on the morning of February 22, 1944, with precipitation of 0.70 inch an hour at Malibou. It was a thunderstorm variety and seemed to have peak loads within short periods of time, rather than continuous heavy rains.

than continuous heavy rains.

In the Tujunga area around Hansen dam, two cars were destroyed and several people were marooned in the mountains by snow

#### FLOOD-STAGE REPORT FOR FEBRUARY 1944

[All dates in February unless otherwise specified]

River and station	Flood	Above stages-		Cı	rest 1
	stage	From-	То-	Stage	Date
ST. LAWBENCE DRAINAGE					
Lake Michigan					
Red Cedar: Williamston, Mich East Lansing, Mich	Feet 7 8	27 27	27 28	Feet 7.5 9.0	27 27
AILANIK SLOTE DEALWAGE			-		-
James: Columbia, Va	10	{ 20 25	20 25	10.0 10.2	20 25
Roanoke: Weldon, N. C Williamston, N. C	31 10	19 20	(1) 21	34.7 11.3	20 27
Neuse: Neuse, N. C. Smithfield, N. C. Goldsboro, N. C. Kinston, N. C. Cape Fear: Lock No. 2, Elizabeth-	14 13 14 14	18 15 16 20	21 23 28 (3)	16. 2 15. 8 16. 8 15. 1	20 21-22 24 28
town, N. C.	20	11	23	27.0	20
Savannah: Butler Creek, Ga	21	16 18	16 19	21, 1	16 18
Ogeechee: Dover, Ga	7	26	(a)		
EAST GULF OF MEXICO DRAINAGE					
Black Warrior: Lock No. 10, Tuscaloosa, Ala	47	28	(2)		
Lock No. 7, Eutaw, Ala	35	{ 21 26	(1) 22	35. 5	22
Tombigbee: Gainesville, Ala. Lock No. 4, Demopolis, Ala. Lock No. 3, Ala. Lock No. 2, Ala. Lock No. 1, Ala. Chickasawhay: Shubuta, Miss.	26 39 33 46 31 30	28 23 19 24 24 24 29	000000000000000000000000000000000000000		
Pearl: Edinburg, Miss. Jackson, Miss. Pearl River, La.	20 18 12	27 20 24	(2) (2)		

#### FLOOD-STAGE REPORT FOR FEBRUARY 1944-Con.

[All dates in February unless otherwise specified]

River and station	Flood		re flood —dates	C	rest I
	stage	From-	То-	Stage	Date
MISSISSIPPI SYSTEM	Feet			Feet	
Upper Mississippi Basin		1			
Rock: Moline, IllZumbro: Theilman, Minn	10	27 26	(3)	10.9	Mar. 1-2
Zumbro: Theilman, Minn	35	( 26	27	36.0 12.1	26
Mississippi: Louisiana, Mo	12	8 12	(1)	12.0 12.3	8-10 28
Missouri Basin					
Big Sioux: Akron, Iowa Floyd: James, Iowa	12 14	27 25	Mar. 2	18, 3 17, 6	28-29 27
Ohio Basin					
Middle Fork: Midvale, W. Va Buckhannon: Hall, W. Va Tygart:	11 10	22 23	23 23	12.0 10.7	22 23
Dailey, W. Va Elkins, W. Va West Fork:	11 14	22 23	23 23	13, 85 14, 3	23 23
Weston, W. Va. Clarksburg, W. Va. Monongahela: Lock No. 6, Pa.	15 8 19.5	22 22 23	23 23 23	16. 5 6. 6 25. 7	23 23 23
Little Kanawha: Glenville, W. Va Creston, W. Va	23 20	23 23	23 23	26.0 20.65	23 23
Cumberland:		f 18	21	23.0	11
Williamsburg, Ky	19	29	(2)		
Celina, Tenn	28	19 29	(1) 24	38. 4	21
Clarksville, Tenn Lock A, Neptune, Tenn	46	29 29	(3) (3)		
New River, Tenn	18	{ 18 29	(1) 18	19.6	- 11
Lock F, Eddyville, Ky Fennessee: Florence, Ala	50 18	28 26	(a) Mar. 5	21. 2	20, Mar.
Arkansas Basin					- 1
Poteau: Poteau, Okla	21	19 29	20 Mar. 3	24. 5 28. 3	Mar. 1
Petit Jean: Danville, Ark,	20	10 17 29	12 21 (3)	21. 6 23. 2	11
Red Busin					
Arkadelphia, Ark	17	[ 18	19	17.8	. 35
Camden, Ark	26	29 23	(2) 23	26. 1	21
Hagansport, Tex	38	18	10	38. 3 38. 0	18
Naples, Tex	22	28 21	(1) 24	22.6	28
Lower Mississippi Basin					
Wolf: Rossville, Tenn	10	10	10	10 . 1	10
WEST GULF OF MEXICO DRAINAGE			-		
Sabine: Logansport, La East Fork: Rockwall, Tex	25 10	26 28	(2) (2)	14.0	29
Dallas, Tex	28 28	28 27	(2)	28. 3	27
Liberty, Tex	24	{ 1 16	4 20	25. 0 24. 6	18-19

Provisional, subject to correction.
 Continued at end of month.

#### CLIMATOLOGICAL DATA

#### CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS

[For description of tables and charts, see REVIEW January 1943, p. 15]

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

			Т	em per	ratur	•					Precipita	tion		
	a2tc	from		Mo	nthl	y extremes			age	from	Greatest monthly		Least monthly	
Section	Section average	Departure from the normal	Station	Highest	Date	Station	Lowest	Date	Section average	Departure from the normal	Station	Amount	Station	Amount
	• F.	°F.		op.			°F.		In.	In.	2 44	In.	2	I
Alabama	88, 7 43, 0	$+6.8 \\ -2.9$		86 82 87 91	1 5	Valley Head	10	13 11	7. 21 2. 58	+1.96	Scottsboro	12, 22 7, 84		1.
Arizona			2 stations	82	24	Lead Hill	-7 4	15	7. 34	+1. 24 +3. 91 +1. 52	Dermott	13. 78	Fayetteville Expt	4.
California	48. 2 44. 9	-2.0	Mecca	91	2	Bridgeport (near)	-27	24	6, 04	+1.52	Lake Arrowhead	19, 92	Calexico	-
Colorado	27.0	2	Holly	73	24	Taylor Park			. 71	27	Cumbres	6, 20		
Florida	65. 7	+5.2	Stuart	93	15	De Funiak Springs	24	13	1. 63		Compass Lake	6. 97	9 stations	
Georgia	54. 5	+5.0	Wayeross	87 60	27	Blairsville	4	13	6. 61		Dahlonega	13, 29	Abbeville	. 2.
Idaho	28.3	+.3		60	7	Landmark	-34	20	1. 47	28	Island Park Dam	4. 09	Buhl	
IllinoisIndiana	33. 5 34. 6	+3.7	New Burnside Seymour	75 76	24 26	Marengo 2 stations	$-21 \\ -18$	19 13	2.44 2.85	+. 52 +. 43	Flora Moores Hill	4, 95	Chicago Heights Waterloo	- 1.
					-				-					
Iowa	26.7	+4.2	Fairfield	68	25	Hawarden	-30	12	1.10	+.02	Mount Pleasant	2.42	Creston	
Kansas	36.3 42.4	+3.1	Sedan	80 78	25 26	Centralia	$-20 \\ -2$		1. 22 4. 59	+, 23 +1, 20	Fort Scott	3. 88 8. 46	Johnson	2
Kentucky	89. 9	Ta. 2	2 stations	18	20	Farmers	22	19	4, 66	+. 12	Stearns	11. 24	Hackberry	1
Louisiana Maryland-Delaware.	36. 5	+5.2 +6.1 +3.2	2 stations	90 72	24	2 stations	0		2.60	39	Paradis Snow Hill, Md	5. 10		1.
Latter to the same of the same of	00.7			70	26	Kenton	- 00	10	1.52	17		3, 19		
Michigan Minnesota	23.7	+3.4 +2.8	Monroe	70 53	20	Big Falls	$-23 \\ -36$	16 18	. 77	+ 02	Charlotte Canby	2. 36		
Mississippi		+6.0	3 stations	85	1 24	Hernando			7. 46	+2.58	Scott	11.85	Fruitland Park	11.
Mississippi	37. 9 23. 6	+4.7	Anderson	82	24	Grant City	-21	12	3. 10	+1.03	Deering.	8.59	Grant City	
Montana	23.6	+1.4	Melstone	64	6	Outlook	-37	17	. 59	17	Deering Kings Hill	3. 54	Opheim	-
Nebraska	27.1	+.8	Beatrice	75 76	25	Ewing	-33 -20	12	. 91	+. 21	Mumper	2. 26		
Nevada	32.4	-1.6	2 stations	76	16	Ewing Seventy-one Ranch	-20	11	1.46	+. 21 +. 38	Mumper	8.03	Rattlesnake	
New England	22, 3	4	Norwalk, Conn	59	24 24	Lake Frontiere, Maine	-36	9	2.50	56	Machias, Maine	5. 24	Bethlehem, N. H	_ 1.
New Jersey	32, 3 36, 7	+1.7	4 stations	59 65 79	28	Runyon Eagle Nest	$-7 \\ -23$	14	2, 38		Clayton	4, 49 2, 24		- 1.
New Mexico	30. 7	5	Obar	70	28	Eagle Nest			. 53	-, 18	Chama	2. 24	4 stations	
New York	22.5	.0	2 stations	61	24	Stillwater Reservoir	$-38 \\ -10$	19	2.32		Whiteface Mountain	5. 15		
North Carolina	45. 6	+2.9	Shelby	81	27	Mount Mitchell	-10	12	6. 35	+2.32	Andrews	14. 59	Jefferson	- 2.
North Dakota	99 9	11.4	MedoraIronton	79	6 26	Golva	-43 -17	11	2.45	18 14	New England Kings Mills	4. 47	2 stations	- 1
Ohio Oklahoma	44. 9	+1.4 +3.8 +3.8	Tipton	81 50 78 84	25	Bellefontaine	4	12	2.86	+1.43	Bear Mountain Tower.	9. 42		1
Oseann		3			16	Committee of the commit	19	20	2, 58	59	Tillamook	14.88	Hart Mountain	10
Oregon Pennsylvania South Carolina	29. 4	+1.0	2 stations		1 24	2 stations	$-13 \\ -18$	19	1. 99	82	Johnstown	4, 00	Milrov	-
South Carolina	51. 6	+1.0 +4.1	do	87	1 24	Ceasars Head	6	13	6.06		Longcreek	10. 51	Milev	3.
South Dakota	18. 2	-1.0	Marion	61	4	2 stations	-42	1 11	. 65	+.09	Centerville	1.92	Raymond	
Tennessee	46. 4	+5.2	Marion Elizabethton	82	28	Crossville	4	13	9.39	+4.99	Waynesboro	15. 64	Rogersville	. 5.
Texas	54. 4	+3.1	Mission	97	1 25	Follett	6	11	2.67	+.89	Jefferson	11.93	Fowlerton	
Utah		-3.0	St. George	67	16	Scipio.	-23	ii	1.15	15	Silver Lake (Brighton)	3. 67	Callao	
Utah Virginia	39, 7	+2.5	Staunton	82	24	Burkes Garden	-2 0	13	4.90	+1.83	Rose Hill	11.42		- 1.1
Washington West Virginia	35.3	+1.2	Wahluke (near) 2 stations	63	1 26	Stockdill Ranch	-13	15	2.83 3.77	90 +. 66	Highley Peak Bluefield	11. 40 7. 38	Benton City Brandywine	- 1
	1				-					-				
Wisconsin Wyoming	21. 5 21. 6	+4.3	Kenosha Ft. Laramie	56 66	26 26	Mellen Moran	$-25 \\ -28$	18 20	1.31	+.13	Brodhead	3. 27 5. 60		- :
Alaska (January)	8.5	+5.0	Tree Point		20				3, 03	1 92	View Cove	31, 96		1
Hawaii	68.8	+. 2	2 stations.	89 92	1.5	Allakaket Haleakala R. S. Guineo Reservoir	32	22	8, 31		2 stations	28, 40	Ukumehame	1
Puerto Rico	72.6	. 0	Ponce	0.0		ALTERNATION AV. U	-	29	2.01	2 20	La Mina (El Yunque).		Santa Isabel	-   0.0

Other dates also.

#### CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS

-		vatio			Pressu	10		T	emp	erat	ure	of th	e air			dew-		Prec	ipita	tion			Win	d					•		ground	nder-
District and station	7e sea	above	apone			ormal	mean	lormal							range	ire of the	midity		normal	inch or	veloc-	ion		laximi velocit			days		es, tenths		ice on gr month	with thu ns
District and same	Barometer above		Anemometer	Station	Sea level	Departure from normal	Mean max. +	Departure from normal	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum	st daily	Mean temperature point	Mean relative humidity	Total	ture from	Days with 0.01 in	Average hourly ity	Prevailing direction	Miles per hour	Direction	Date	Clear days	ondy	Cloudy days	Average cloudiness,	Total snowfall	Snow, sleet, and ice on at end of month	Number of days with thunder- storms
New England	Ft.	Ft.	Ft.	In.	In.	In.	° F. 24, 6	° F.	°F.		°F.	°F.		° F.	°F.	° F.	% 72	In. 2,67	In. -0,8		Mi.								0-10 5,8		In.	
Eastport. Greenville, Maine Portland, Maine 1 Concord 1 Burlington 1 Boston 1 Nantucket Block Island Providence 1 Hartford 1 New Haven 1 Middle Atlantic States	103 289 403 124 12 26 159	6 5 4 6 33 11 11 46 5	41 43 45 51 62 59	28, 76 29, 87 29, 69 29, 56 29, 86 29, 98 29, 99 29, 84 29, 87	30.00 30.02 30.02 30.04 30.02 30.01 30.03	02 02 +.01 02 03 03 01	20. 6 12. 0 21. 1 20. 7 16. 6 29. 6 31. 0 31. 2 30. 4 28. 2	-1.0 -1.6 -1.7 +.4 -2.8 +.8 +.3	44 41 43	29 27 24 24 24 15 15 24 24 24	29 25 32 32 28 38 37 38 38 38 38	-8 -27 -10 -11 -23 7 12 12 12 8 -2 2	9 9 2 20 19 9 19 19 14 14	12 -1 10 9 6 21 25 25 22 19 20	42	12	80 67 80 60 78 71 67 72 70	4. 42 2. 87 4. 01 2. 56 2. 53	+0.924 +.9 -1.1 -2.2 -1.3 -2.1 -1.4	10 12 10 13	8.9 8.1 10.3 12.7 11.5 17.5 9.3 9.8	nw. s. nw. nw. nw.	35 46 35 40 44 38 54 34 34 28	nw. s. ne. e. s. se. se.	15 15 15 5 11 11 15 18 18 18	8 10 9 4 8 11 13 7	10	11	5. 4	29. 4 26. 5 17. 6 20. 7 25. 9 9. 6 11. 6 6. 3 7. 2 8. 9 8. 2	27.0	0 0 0 0 0 0
Albany   Binghamton 2 New York   Harrisburg   Philadelphia   Reading   Scranton   Atlantic City   Trenton   Baltimore 2 Washington 2 Cape Henry   Lynchburg   Norfolk 2 Richmond	314 374 114 323 805	60 415 30 6 47 72 37 89 100 56 8 144 80	79 454 49 56 306 104 172 107 215 100 54 184 125	29. 09 29. 71 29. 67 29. 96 29. 72 29. 18 30. 02 29. 87 29. 96 29. 98 30. 05 29. 35 29. 99	30. 08 30. 10 30. 10 30. 10 30. 08 30. 09 30. 11 30. 10 30. 09 30. 11	.00 +.01 .00 02 .00 01	26. 3 32. 6 33. 0 33. 8 33. 2 28. 6 35. 9 33. 4 38. 0 38. 2 42. 2 41. 4 43. 4 41. 2	+2.3 +1.3 +2.8 +1.3 +2.7 +1.3 +2.7 +2.6 +2.8 +1.1 +.7 +1.6	47 51 59 62 63 61 53 56 61 70 70 67 74 72 74	6 6 24 24 24 24 24 23 24 24 24 24 24 24 24 24	32 35 40 40 41 40 36 42 40 45 46 48 51 50 50	-1 4 12 15 15 11 7 17 14 18 17 23 16 22 18	19 19 13 13 13 13	15 17 25 26 26 26 21 30 27 31 31 36 32 36 32	37 38 28 33 31 36 36 26 31 30 33 32 36 30 33	17 20 23 24 24 28 24 26 25	74 71 69 64 80 66 78 60	2. 20 1. 25 1. 93 1. 97 1. 31 2. 64 1. 99 2. 20 2. 48 5. 01 5. 03 5. 90 5. 40	3 -1.8 -1.5 -1.6 -1.8 8 -1.4 -1.3 9 +1.7 +1.8 +2.6 +2.1	12 10 9 9 12 9 11 8 7 13	7. 8 16. 4 10. 0 10. 5 8. 2 13. 2 7. 5 10. 6	w. nw. nw. nw. nw. nw.	40 24 70 37 38 45 33 51 34 42 38 40 31 30 31	w. nw. nw. nw. nw. nw.	1 15 1 23 1 1 1 1 1 1 1 29 29 29 11	4 9 5 4 7 5 7 8 9 8 8 7 5	9 8 8 10 5 9 7 7 7 9 7 9	16 12 16 15 17 15 15 14 13 12 14 13	7.3 5.7 7.1 7.3 6.9 6.8 6.4 6.3 6.3 6.4 6.4 6.7 6.6	4.7 8.3 7.0 1.1 5.0 5.8 2.1 T	.0 TT .0 .0 T .4 T .5 T .0 .0 .0	1 0 0 0 0 0 0 0 0 0 0
South Atlantic States  Asheville Charlotte <sup>2</sup> Greensboro <sup>1</sup> Hatteras Raleigh <sup>1</sup> Wilmington Charleston <sup>2</sup> Columbia, S. C. <sup>2</sup> Greenville, S. C. <sup>1</sup> Augusta <sup>2</sup> Sayannah <sup>2</sup> Jacksonville <sup>2</sup>	779 886 11 376	63 5 6 27	86 56 50 69 107 92 91 36 77 152	29, 25 29, 14 30, 06 29, 68 30, 02 30, 05 29, 72 28, 97 29, 90	30. 12 30. 08 30. 11 30. 11 30. 10 30. 10 30. 10 30. 13	03 03 01 01 01 02 +.01	44. 9 51. 4 56. 1 52. 8 47. 4 54. 0	+4.9 +3.0 +1.4 +2.7 +3.5 +3.7 +4.6 +4.1 +4.0 +4.9	76	26 27 27 24 24 26 28 25 27 27 26 27	53 56 52 56 54 60 64 62 56 63 68 73	8 16 12 27 17 22 26 21 16 23 30 33	13 13 13 13 13 13	33 38 32 42 36 42 48 44 38 45 50 52	45 30 40 28 35 32 23 34 34 34 28 32	48	77 71 81	5, 73 6, 46 7, 14 4, 87 8, 66 5, 10 6, 20 7, 18 4, 46 6, 25 5, 41 4, 37 1, 79	+3.2 +2.8 +4.5 +1.0 +2.8 +4.1 +.6 +.9 +1.2 +1.1	15 13 11 12 11 12 15 17 16 10	8. 1 14. 5 9. 9 9. 6	ne. ne. ne. nw. sw. sw. ne. nw.		se. nw. nw. s. nw. nw. nw. ne. nw.	14 29 29 14 29 29 29 29 14 29 11	6 6 8 7 8 5 7	7 7 1 6 3 10 6 7	16 16 16 20 16 18 14 16 16 13 15 6	7.0 6.9 6.8 6.6 6.8 6.6 6.8 6.6	.3 2.5 .0 .0 .0 .0	.0	1 2 1 2 3 0 2 2 1
Florida Peninsula			110	00.00			70, 8	+4.0			1						82	0. 19											3. 2			
Key West <sup>2</sup>	25	242	249	30.09		+. 03	07. 6	+2.9 +5.7	84 83 83	29 29 21	79 76 77	60 54 39	8 1 13	69 66 58	15 20 32	65 62 59	80 84 83	. 56	-1.4 -2.1 -2.1	0	8. 6 11. 5 9. 0	e. se. sw.	33 34	nw. se. s.	14 14	22 22 12	5 5 13	2 4	4.2	.0	.0	0 0 2
East Gulf States  Atlanta 1	1, 173 370 273 35 56 741 700 57 218 375 247 53	79 49 11 54 9 5 86 92 67 82	58 51 79 62 161 105 92 102	29, 36 30, 06 29, 87 29, 70 29, 82	30. 11 30. 14 30. 12 30. 13 30. 12 30. 12 30. 10 30. 11	01 +.02 +.02 00 +.01 02 00 02	53. 9 59. 9 62. 2 61. 9 53. 0 51. 6 60. 4 56. 6 55. 3 56. 2 63. 8	+5.1 +4.6 +4.9 +5.7 +6.7 +7.1 +5.7 +5.0 +5.7 +4.4 +7.5	76 81 82 77 79 79 78 80 81 81 77 82	26 26 24 23 26 26 25 24 25 25 21 27	58 63 71 69 70 62 60 68 65 64 63 71	16 21 29 32 30 15 18 29 24 23 25 34	12	42 45 49 55 54 44 43 52 48 46 49 56	31 34 32 26 32 35 33 34 32 35 31 30	56 54	76 76 86 84 83 85 76 83 80 80	4. 64 4. 69 2. 63 7. 46 6. 55 1. 55 5. 45 7. 91 6. 02 5. 19	+2.0 6 .0 +.6 -1.9 +1.9 -4.0 2 +2.3 +1.1 +.8	15 11 7 8 23	7.5 8.1 7.3 9.3 7.2 7.9 7.3 9.4	s. sw. sw. sw. s. n. sw.	24 26 24 28 26 25 26 26 26	n. nw. nw. nw. s. w. w. sw. nw.	29 14 12 14 14 9 14 14 8 12	4 5 6 10 4 6 2 4 5 3 3 5	4 7 8 9 13 5 6 10 5 5 5 9	21 17 15 10 12 18 21 15 19 21 21 21	5. 4 6. 5 8. 0 6. 9 7. 4 7. 7 8. 0 6. 9	.0	.0	5 3 2 2 1 3 7 1 3 7 7
West Gulf States  Shreveport 1 Fort Smith Little Rock 1 Austin 1 Brownsville 1 Corpus Christi 1 Dallas 1 Fort Worth 1 Galveston 2 Palestine Port Arthur San Antonio 1	249 463 357 605 57 20 512 679 54 138 510 34	57 5 10 8 4 5 5 106 157 64 59	82 58 41 54 33 45 56 114 190 72 134	29. 57 29. 71 29. 41 29. 92 29. 99 29. 51 29. 35 30. 00 29. 91 29. 54	30, 06 30, 09 30, 05 29, 98 30, 01 30, 07 30, 08 30, 05 30, 06 30, 08	04 02 04 +. 01 02	61. 2 56. 0 61. 0	+4.7 +4.6 +4.0 +2.4 +5.6 +7.5 +1.9 +4.5 +4.7	75 81 77 80 86 85 77 79 76 79 77 80 85	28	62 56 58 64 76 71 61 60 66 68 64 68 66	26 19 20 26 43 35 20 23 35 30 26 30 26	12 12 13 12 12 12 12 12 12 12 12 12 12	47 39 40 48 60 57 43 44 56 54 48 54 49	31 35 30 32 26 23 34 32 21 22 37 25 29	48 37 42 50 62 58 46 44 56 54 48 55	82 70 81 81 86 86 83 77 90 84 76 85	3. 65 5. 57 5. 80 5. 98 3. 89 41 .15 4. 45 4. 81 1. 11 1. 87 5. 43 2. 84 1. 68	+2.2 +3.2 +2.0 +1.5 -1.1 +2.1 +3.0 -1.8 -1.4 +2.2	14 16 14 5 6 14 16 11 14 14 14	9. 0 9. 1 12. 7 13. 2 10. 1 11. 1 11. 5 11. 3 8. 2	6. n. n. s. se. n. n. s. se. se. s.	27 27 32 30 34 38 43 29 36 23 36	nw. w. sw. n. s. n. s. n. nw. se. nw.	11 10 5 10 8 11 25 27 11 14 10 14 28	1 5 4 2 0 4 3 2 2 2 1 3 2	7 6 11 4 9 6 6 7 5 4 6 6 6	20 22 23	7.9 8.3 7.0 8.3 7.6 8.1 7.9 7.8 8.0 7.6 8.2	0. 0. 0. T	.0	7 5 4 6 0 7 7 1 1 4 1 5

See footnotes at end of table.

#### CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS—Continued

•		ation			Pressur	0		Ter	mper	ratu	re o	f the	air			dew-		Prec	cipita	tion		,	Wind						8		ground	thunder-
District and station	e sea	вроте	above			ormal	mean	ormal								re of the	humidity		ormal	inch or	veloc-	lon		laximi velocit			days		ss, tenths		ice on	with
District and station	Barometer above level	Thermometer		Station	Sea level	Departure from normal	Mean max. + min. + 2	Departure from normal	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum	Greatest daily ra	Mean temperature point	Mean relative hu	Total	Departure from normal	Days with 0.01 in	3	Prevailing direction	Miles per hour	Direction	Date	Clear days	Partly cloudy da	Cloudy days	Average cloudiness,	Total snowfall	eet, and	Number of days wil
Ohio Valley and Tennessee	Ft.	Ft.	Ft.	In.	In.	In.	° F.	° F. +4.2	°F.		°F.	° F.		° F.	°F.	° F.	% 77	In. 4.88	In. +1.3		Mi.								0-10 7. 1	In.	In.	
Chattanooga   Knoxville   Memphis   Nashville   Lexington   Lexington   Louisville   Evansville   Indianapolis   Terre Haute   Cincinnati   Columbus   Vandalia   Ekina   Parkersburg   Pittsburgh	762 995 399 546 989 525 431 823 578 627 822 1,003 1,947 637 842	27 5 6 106 12 5 68 11 90 6	53 86 72 120 40 54 149 51 110 55 78	29, 04 29, 66 29, 51 29, 63 29, 63 29, 19 20, 48 29, 41 29, 19 28, 99 27, 98	30, 12 30, 10 30, 10 30, 13 30, 10 30, 11 30, 12 30, 11 30, 10 30, 10 30, 10 30, 10	- 01 - 02 + 02 - 01 - 00 + 01 + 01 + 01 - 00 - 00	46. 6 48. 5 46. 6 40. 6 41. 2 39. 2 33. 0 35. 4 37. 9 35. 2 33. 1 35. 6 37. 9	+5.7 +5.5 +5.0 +5.2 +3.9 +4.3 +2.7 +3.3 +5.1 +4.5	75 75 74 76 72 71 68 70 73 70 69 66 74	26 26 26 26 26 26 26 26 26 26 26 26 26 2	57 56 57 55 51 48 48 42 44 46 43 41 47 48 41	14 12 20 13 5 11 6 -8 -1 4 -1 -6 7 8	13 13 13 13 12 12 12 13 12	37 37 40 38 30 34 30 24 27 30 28 25 24 28 24	39 40 31 32 32 24 33 33 31 29 27 29 37 32 29	40 38 41 38 31 30 26 28 29 26 27 27 28 24	72	11. 03 9. 38 9. 24 7. 14 3. 67 3. 34 3. 13 2. 82 2. 88 4. 26 2. 05 2. 45 4. 26 3. 18 2. 26	+1.2	13 9 9 11 10 10 10 10 18 12	8.8 8.7 9.4 9.6 9.2	sw. e. s. n. nw. sw. n. ne. s. nw. w. nw.	35 38 27 28 36 29 43 36 27 30 47 30 22 47	NW. SW. SW. SW. W. SW.	22 29 25 11 5 22 22 22 5 23 22 14 1 23	10 7 6 4 4 4 6 6	8 7 6 6 10 8 8 9 10 5 6	17 17 19	7.2 7.7 6.0 6.7 6.9 7.3	5.8 2.0 3.0 8.8 11.0 5.8 9.1 7.1 5.0	.0 .0 TT .0 .2 T 2.0 .3 2.7 1.9	4 6 4 1 0 2 3 1 1 1 1 1 1 1
Lower Lake Region  Buffalo i	768	34					26, 5 25, 1	+1.4	50	5	33	-5	19	17		19	79 78	2, 13 2, 92	1	14	14.1	sw.	45		6	3	8	18	7.6	24. 6	Т	0
Canton Oswego Rochester Syracuse Erie Cleveland Sandusky Toledo Fort Wayne Letric Letric Fort Wayne	714 762 629	57 27 5	85 69 57 81 54	29, 67 29, 48 29, 39 29, 28 29, 25 29, 39 29, 38	30. 06 30. 08 30. 07 30. 09 30. 11 30. 10 30. 10 30. 09	+.02 +.02 +.04 +.03 +.03	18. 0 25. 1 24. 0 24. 5 28. 7 29. 5 31. 2 28. 2 28. 8	+1.2 +1.1 +1.6 +1.8 +3.2 +3.8 +2.2 +2.2	50 50 53 68 72	5 5 5 6 5 26 26 26 26 26	33 29 32 33 35 38 38 37 37 37	-20 3 -7 -2 4 0 1 -4 -8 6	8 19 19 19 13 13	7 18 15 16 22 21 24 20 20 20	42 33 37 42 25 30 33 33 31 32	19 12 17 18 19 22 24 23 22 22		2. 08 2. 26 2. 91 2. 55 2. 22 1. 66 1. 62 1. 22 2. 15 1. 82	5 +.1 3 4 9	16 12 13 10 10	9. 2 11. 2 11. 5 11. 1 9. 3 11. 2 10. 0 12. 0 9. 3 10. 3	8W. 8. 8W. 8W.	27 32 49 40 27 49 34 39 38	W. W. S0. SW. SW. W.	5 1 6 26 23 23 5 22 5	3 4 3 3 4 2 5 7 9 5 4	8 9 5 6 9 7 6 6 8 8	17	7.9 7.6 7.6 7.3	20. 7 19. 2 21. 0 18. 6 12. 5 14. 2 8. 2 7. 0 10. 2 11. 1	TTTTOT	0 0 1 1 1 1 1 1
Upper Lake Region							22,8										79	-											7.0			
Alpens Escanaba Orand Rapids  Lansing  Lansing  Ludington Marquette Soult Sainto Marie  Chicago  Green Bay Milwaukee  Duluth  Duluth  Duluth  Duluth	609 612 707 878 637 734 614 673 617 681 1, 133	51 70 5 60 44 11 5	72 244 90 66 73 52 36 141 66	29. 37 29. 29 29. 10 29. 22 29. 34 29. 34 29. 38	30. 07 30. 08 30. 09 30. 06 30. 05 30. 10 30. 08 30. 09	+.01 +.03 +.01 +.02 +.02 +.02 +.03	25. 4 21. 4 16. 9 29. 0 23. 0 25. 5	+5.4 +4.7 +2.3 +5.0 +5.5 +3.9 +5.6 +4.2	40 65 61 39 38 62	26	28 35 32 28 26	1 1 8 -4 -1 -5 0 -4 -15	16	16 13 22 18 15 8 8 21 15 18 4	28 30 30 30 29 33 30 34 34	18 16 22 21 14 12 23 16 18 6	76 84 82 76 82 81 74	1. 90 1. 03 1. 70 1. 02 1. 69	8 5 +.2 1 4 4 6	15 151 10 9 11		nw. sw. nw. nw. s. s. sw.	29 33 48 26 31 36 38 26 41 31	n. sw. w. sw. sw. n. w.	15 5 26 5 13 23 5 5 5 5 23	5 3 5	7 6 8 7 5	17		3. 2 8. 8 15. 4 16. 1 8. 3 12. 5 5. 8 9. 3	2.5 4.3 T T	0 1 2
North Dakota	040				20.10		12, 2	-	10	05		~	10				83	0, 30							1-			10	6,0	1.0		0
Fargo <sup>1</sup> Bismarck Devils Lake Lemmon, S. Dak Grand Forks <sup>1</sup> Williston Upper Missianippi Valley	1, 677 1, 478 2, 602 832 1, 878	5 5 11 4 4 4 42	38 41	28. 25 28. 46 27. 24 20. 19	30, 14 30, 14 30, 00	+. 02 +. 03	13. 6 9. 6 16. 0	+1.9 +4.1 -2.3	35 33 45 36 47	25 20 28 6 20 2	23 20 24 21 27	-22 -34 -26 -27 -24 -27	12 11 11 11 11 11	-2 -1 3 -2 5	41 49 37 46 46 46	6 6 11 5 11	84 88 88 78	. 16 . 36 . 12 . 41 . 14 . 54	+.1	9 6 3 6 10	11. 6 8. 5 8. 4 6. 5	n. e. sw. nw. n. sw.	26 25	n. nw. nw.	17 8 19	8 11	3	13	6. 1	5.8 1.5 5.5 4.0 5.8	2.6 T 6.5 T	0 0 0
Minneapolis-St. Paul, Minn Springfield, Minn La Crosse Madison	974 1, 015 606 860	4 5	42 29 78 51 50 99	28, 95 29, 28 29, 00 29, 00 29, 43 29, 13 29, 32 29, 34 29,72 29, 45 29, 41	30. 09 30. 10 30. 14 30. 14 30. 10 30. 11 30. 12	+.01 +.03 +.04 +.04 01 +.02 +.01 01 +.03 +.01	20. 6 20. 9 22. 7 24. 5 23. 6 27. 4 28. 8 26. 8 28. 0 43. 7 29. 4 33. 8 38. 2	+4.7 +5.7 +5.4 +6.5 +3.9 +5.1 +4.6 +4.3 +4.3 +3.4	45 50 47 46 50 53 62 49 54 73 58 65	21 4 5 4 26 25 4 25 24 23 22	31 32 32 33 37 39 35 38 52 39 42	$-15 \\ -8 \\ -2$	12 12 12 12 12 12 12 12 12 12 12	11 14 17 14 18 19 18 18 35 20 25	32 36 32 32 32 31 36 32 31 27 34 34 31	15 17 18 22 20 20 20 22	78 79 82 80 82 78 76 82 80 84 73	1. 10 1. 65 1. 32 1. 96 . 99 1. 99 . 81 1. 95 1. 49 4. 63 1. 74 2. 76 2. 72	+.1 +.2 +.4 4 +.4 5 +1.4 3 +1.4 3 +.1	7 5 1 9 8 1 8 1 9	9 8. 8.3 6.5 9 9. 9.6 0 6. 11.5 1 9. 10.5	nw. nw. 5 nw. nw. 6 w. nw. 3 s. nw. 5 sw. 8.	30 26 24 20 35 34 17 43 30 39 37 38	w. nw. ne. nw. w. s. w. s. w. sw. w.	23 5 10 5 22 5 4 5 22 22 22 22 22	11 7 6	9	9 12 17 9 17 14 12 17	5. 6 6. 3 6. 5 5. 4 7. 3 5. 4 6. 4 7. 0 6. 9 6. 8 6. 7 6. 2	4.2	T .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	1 0 1 1 3 1 2 1 4 1
Missouri Valley Columbia, Mo.1	784				30. 10	01	29. 9 36. 3	+3.9	69	23	46	-5 -5	12		37	28	74	1. 57 2. 78		10	8.1		25	w.	22	8				7.1	.0	2
Kansas City 1  8t. Joseph 1  8t. Joseph 1  8t. Joseph 1  8t. Joseph 1  Topeka Lincoln 1  Omaha 1  Valentine Sloux City 1  Huron 1	ana!	mark.	76 49 60 87 81 68 54	29, 13 29, 03 28, 65 29, 02 28, 79 28, 89 27, 28	30. 09 30. 10 30. 08 30. 09 30. 11 30. 11	02 03 +.01 .00 +.02	35, 6 33, 7 39, 2 36, 4 30, 0 28, 2 21, 4	+4.4 +4.1 +5.2 +5.4 +3.9 +3.9	68 73 76 71 63 50	25 24 25 25 4 24	44 - 50 47 40 - 39 -	-10 1 -3 -20 -19 -21	12 12 12 12 12 12	25 24 29 26 20 17 11 13	35 36 36 38 40 41 43 38 39	27 25 31 27 21 21 16 19	71 74 76 70 78 76 86 86	1. 32 3. 16 . 97 1. 21 . 94 1. 84	4 +.7 6 +.2 +1.3	7 6 13 6 7 10 10	10.3 8.9 12.6 9.1 8.7 10.7 7.8 9.5	ne. e. se. n. n.	38 34 34 29 33 40 27 33	sw. w. sw. nw. n. e. n. nw.	26 22 22 5 10 10 25	9 12 5 10 7 8 11	9 7 8 9 6 10	11 10 16 10 16 11 8	6.0 5.2 7.0 5.6 6.2 5.9 5.0	8.0 11.1 11.3 5.8 11.9 8.4 19.6 5.5 10.1	T .0 .0 T .0 .0	0

#### MONTHLY WEATHER REVIEW

#### CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS—Continued

		ation		1	Pressur	e		Ten	apera	ture	of th	he ai	r		dew-	-	Prec	ipitat	ion		1	Vind					*	8		ground
District and station	98 9.	above	above			ormal	mean	ormal		-		1		nge	ire of the	midity		normal	nch or	veloc-	tion		aximu			days		ess, tenths		month
District and season				Station	Sea level	Departure from normal	Mean max. +	Departure from normal	Maximum	Date Meeting	Minimum	Date	Mean minimum	Greatest daily range	Mean temperature of point	Mean relative humidity	Total	Departure from 1	Days with 0.01 inch more	Average hourly ity	Prevailing direction	Miles per hour	Direction	Date	Clear days	-	Cloudy days	Average cloudiness,	Total snowfall	Snow, sleet, and ice on ground at end of month Number of days with thunder
Northern Slope	Ft.	Ft.	Ft.	In.	In.	In.	° F.	° F. +1.4	°F.	0,	F. °	F.	° F	°F.	° F.	% 74	In. 0.65	In. 0.0		Mi.							-	0-10 6. 8	In.	In.
Billing s 1  Havre Helena 1  Missoula 2  Kalispell Miles City 1  Rapid City 1  Cheyenne Lander Sheridan 1  North Platte 2	3, 570 2, 507 4, 124 3, 205 2, 973 2, 371 3, 259 6, 094 5, 352 3, 790 2, 821	16 11 5 80 48 5 5 5 60 5	67 43	26, 25 27, 34 25, 74 26, 59 26, 89 27, 50 26, 59 23, 88 24, 56 26, 06 27, 06	30. 06 30. 08 30. 05 30. 02 30. 09 30. 08 30. 02 30. 07	01 03 06 .00 01 01	29. 9 27. 4 18. 2 21. 3 27. 0 16. 4 21. 5	+9.2 +1.6 +3.2 +4.1 5 3 -6.1	60 53 55 51 49 46 53 57 49 54 56	6 6 6 6 6 6 6 6 6 6 24	35 - 35 - 35 - 37 - 35 - 30 - 33 - 39 - 34 - 36 -	-7 1 -8 1 -8 1 5 1 2 1 24 1 15 1 -2 1 13 1 12 1 -5 1	0 16 5 11 0 11 77 22 77 29 11 16 33 11 88 55	31 42 38 28 28 28 34 34 38 34 44 42 31	18 14 16 23 21 14 16 10 14 20	70 68 70 78 74 79 84 66 70 73 82		1 6 .0 .0 +.4 +.1 +.2	13 12 8 7 7 9 8	11.0 9.0 7.3 6.9 5.1 11.9 11.9 3.5 6.5 6.9	0. W. 80.	36 26 42 34 22 50 42 22 33 27	W. W. 0. W.	6 7 6 21 6 25 6 4 6 10	4 2 7 4 1 8 9 5 8 4 6	11 8 6 6 6 7 17 13 10 8	14 19 16 16 22 15 13 7 8 15 15	7. 7 7. 1 7. 0 8. 2 6. 8 5. 8 5. 8 7. 1 6. 8	15.4 6.5 12.7 9.2 5.0 4.6 6.5 9.2 16.7 9.9 7.4	T 2.0 2.7 T .1 2.4 2.5 hT 8.6 1.4 T
Middle Slope Denver 3	5, 292	106	113	24. 63	29. 96	05	37.7 33.2	+3.3	67	6	43	1 1	1 2	35	20	71 64		+0.3	8	7.1	8,	29		ð	8 9	11	10	5.6	6.2	.0
Penebio 1 Concordia Dodge City 1 Wiehita 1 Oklahoma City 3 Tulsa 1	5, 292 4, 690 1, 392 2, 509 1, 358 1, 214 674	5 50 5 6 10 10	36 58 58 64 47	25. 21 28. 58 27. 39 28. 60 28. 76 29. 33	29. 96 29. 99 30. 10 30. 04 30. 07 30. 06 30. 06	05 01 +. 01 02 01 01	34. 1 34. 0 36. 0 38. 8 44. 7 43. 4	+2.0 +4.0 +2.8 +4.4 +5.1 +4.3	67 67 71 68 72 79 78	6 25 24 25 24 25 24 25	53	6 1 3 1 7 1 14 1 15 1	1 2 1 2 2 2 1 2 2 2 1 3 2 3	35 45 39 42 33 34 34 35	20 21 24 26 29 36 35	64 65 72 74 72 75 76	. 09 1, 12 . 77 1, 34 2, 03 3, 31	+.2	8: 3 6 8 7 15 12	8. 3 7. 8 15. 3 14. 7 8. 8 10. 7	nw. 8. 8e. 8. 8.	36 30 55 42 28 34	nw. n. n. n. nw. sw.	25 5 10 10 10 25	10 5 5 5 5	7 6 6 10 4 8	13 18 14 20 16	6.0 7.1 6.5 7.7 7.1	6. 2 7. 0 . 3 T 6. 3	.0 2.3 T .0
Southern Slope Abilene 2	1 738	10	56	28 21	30.02	03	48. 8 51. 0	+3.3	76	26 6	00	20 1	1 4	30	42	70	1. 32 2. 51	+0.6	10	9.1	8.	24	8.	15	3	6	20	7.8	.0	.0
Amarillo 1 Del Rio Roswell	1, 738 3, 676 960 3, 566	10 5 63 75	56 42 71 85	26. 24 29. 00 26. 35	30. 02 30. 02 29. 99 29. 97	01 01	39. 6 59. 0	+3.8 +3.5 +3.0 +3.0	76 67 82 73	26 23 25 8	67	9 1	1 2 5	30 33 27 242	42 30 47 30	74 70 00	1.46	+.9	4	14. 9 9. 1 7. 8	8W. 86. 8.	50 34 34	n. nw. w.	10 24 9	3 8 6 10	6 2 3 7	20 19 20 12	7.8 6.9 7.5 5.6	.0 1.3 .0 T	.0
Southern Plateau							49.7	-1.4								60	1, 26	+0.7										5.0		
El Paso <sup>1</sup> Albuquerque <sup>1</sup> Flagstaff Phoenix <sup>2</sup> Tucson <sup>1</sup> Yuma Independence	3, 778 5, 314 6, 907 1, 107 2, 555 142 3, 957	5 5 10 39 6 9 5	85 48 59 87 30 54 26	28. 14 24. 68 23. 23 28. 82 27. 35 29. 84	29. 93 29. 93 30. 02 29. 96 29. 96 29. 97	02 +. 02 01 03	40.0 30.2 52.7 50.7	+.8 5 -2.4 -1.5 -3.2		5 3 5	61 52 42 64 64 68	34 1 28 1	1 3 4 2 1 1 2 4 1 3 4 4	3 37	31 26 21 38 32 38	53 58 72 66 55 59	1. 42 . 42 2. 98 2. 10 1. 10 1. 25	+1.0 +.1 +1.3 +.1 +.8	13		80. DW.	21	w. nw s.	21 9 25 10	0	12 8 6	10 8 12 11 12 4	5. 0 5. 4 6. 2 5. 1 5. 2 3. 2	T T 28. 5 .0 .0	.0 14.0 .0 .0
Middle Plateau							31, 6	-1,6								74	1, 12	+0.2			-							6, 6		
Reno <sup>1</sup> Tonopah Winnemucca Modena Salt Lake City <sup>1</sup> Grand Junction	4, 527 6, 090 4, 339 5, 473 4, 227 4, 602	20 9 5 10 32 60	52 20 56 46 46 68	25, 39 23, 95 25, 56 24, 54 25, 57 25, 34	30.04	08 04	35. 1 30. 0 31. 9 28. 6 29. 4 34. 8	6 -4.5 -1.6 -2.4 -2.7 +1.9	56	6 7 6 7 29 29	27	13 1 12 1 16 2 6 1 5 1 16 1	8 2 3 2 7 2 6 1 6 2 1 2	3 40 3 25 3 25 3 35 28 28	26 25 26 24 22	70 83 76 79 60	1. 48 . 51 1. 80 1. 18 1. 11 . 61	+.1 +.9 +.2 2		7.5	80. De.	36 31 33 26 26	nw. sw.	28 14 8 28 25	9	10 15 8 10 8	15 5 17 12 17 12	6. 9 7. 3 6. 1 7. 2 5. 7	13. 8 5. 8 12. 1 12. 6 20. 1 4. 3	T 4.7 .5 .0 .0
Northern Plateau		11					33, 2						-			-	1,06	-										8.0		
Baker <sup>3</sup> Boise <sup>1</sup> Pocatello <sup>1</sup> Spokane <sup>1</sup> Walla Walla Yakima	3, 471 2, 739 4, 478 1, 929 991 1, 076	5 27 57	31	25, 42	30. 05 30. 03	06 07	27. 2	+.3 +1.2 +1.3	53 52 52 51 59 56	6 4	39 42 36 - 10 14 14	11 1 11 1 -5 1 12 1 27 1 22 2	5 3	27 25 33 23 21 25	27	86 82 81 80	1. 20 . 78 1. 08 2. 05 . 46	4 3 5 7 +.2 6	14	9.3 5.5 5.8	sw. ne.		sw.	6 28 4 6 6 21	3 0	11 4 6 2 10 3	21 24 19 23	7. 9 8. 4 8. 1 8. 4	10. 1 2. 9 1. 0	T.0
North Pacific Coast . Region							43, 4	+1.2								77	3, 58	-1,9										7, 5		
North Head Seattle <sup>1</sup> Tacoma Tatoosh Island Medford <sup>1</sup> Portland, Oreg. <sup>2</sup> Roseburg	211 125 194 86 1, 329 154 510	90 172 9 29 68	291	29, 90 29, 82 29, 92 28, 61	30. 02 30. 02 30. 01	04 +. 01	43.8 42.5 43.4	+1.0 +1.9 +2.4 5 +2.0	55 54 50 60 58 62	5 8	51	35 1: 33 2: 31 2: 37 2: 23 1: 32 2: 28 1:	2 36 3 36 3 38 6 46 2 33 0 38 2 38	17 18 19 11 33 22 26	35	80 76 76 74 81 76	2. 38 3. 38 6. 29 2. 01 3. 82	-3.6 -1.6 -1.4 -3.4 1 -1.7 -1.5	16 16 19 18 20	9. 4 15. 0	se. s. e. nw. se.	45 35 33 50 21 24	sw. n. ne. sw.	25 6 21 21 21 24 27	6	7245679	21 19 18	7. 5 7. 6 7. 1 7. 1 7. 5 7. 4 8. 3	.0	.0
Middle Pacific Coast Region	-						48, 6									72	6, 06	+1.0				-						6, 0		
Eureka Redding <sup>1</sup> Sacramento San Francisco <sup>2</sup>	60 722 66 155	72 20 92 112	88 34 115 132	30. 00 29. 22 29. 93 29. 84	30. 06 29. 99 29. 99 30. 00	05 10 10	47. 4 49. 0 51. 6	-2.3 -1.1 6		1 6 8 7 6 8	52 56 57 56	33 1: 34 16 35 2 42 2	2 41 6 36 7 41 1 47	20 26 23 16	34	62 72 76	7. 99 7. 27 5. 34	-3.0 +1.2 +4.2 +1.4	19 13 13 11	7.9 8.4 8.8 8.4	se. nw. se. w.	30 27 26 26		11 27 12 24	7 5 11 11	6 11 7 6	13 11 12	6.7 6.4 5.3 5.4 5.4	0. T 0.	.0
South Pacific Coast Region								-1.3		1							4, 97					0		90	2	7				0
Fresno 1 Los Angeles San Diego 1 West Indies	327 338 87	5 223 20	35 250 55	29, 65 29, 66 29, 94	30, 00 30, 00 30, 01	08 06 05	48. 6 53. 7 54. 6	-1.7 -1.8 8	75 71	5 6 10 6	13	29 140 2 40 2 40 1	4 46	28 26 29	40 40 44	72 64 69	2. 60 8. 65 3. 65	+1.1 +5.5 +1.6	13 14	5. 1 8. 2 7. 5			se. se. se.	22 22 22	7 12 13	7 5 6	15 12 10	6.5 5.0 4.8	.0	.0
San Juan, P. R	82	10	54	29 97	30.09		74.8	1	85	4 8	100	85 2	6 70	15	68	78	1. 28	-1.6	11	11.3	e.	34	0.	14	12	15	2	4.5	.0	.0

#### CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS-Continued

		atior rume		1	Pressur	е		Ter	mper	ratu	re of	the	air			dew-		Prec	ipita	tion			Win	d					tenths	-	punoa	under
	Vo 968	above	above			normal	mean	normal			а				daily range	rature of the point	humidity		normal	inch or	veloc-	direction	M	aximu velocity	m		days		cloudiness, ter		sleet, and ice on ground at end of month	days with thunder
District and station	Barometer abor	Thermometer	Anemometer	Station	Sea level	Departure from normal	Mean max. + min. +	Departure from	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum	est	Mean temperature point	Mean relative !	Total	Departure from	Days with 0.01	Average hourly ity	Prevailing direc	Miles per hour	Direction	Date	lays	cloudy	Cloudy days	Average cloud	Total snowfall	show, sleet, and	Number of day
Panama Canai Salboa Heights	Ft. 118 27	Ft. 6		In.	In. 129.88 129.90	In. +. 02 +. 01	° F. 80. 4 80. 6	° F. +.1 2	°F. 91 84	15	90 84	° F. 68 74	26 5	° F 71 78	°F 22 10	° F. 70 72	% 372 375	In. T 2.96	In.  +1.	10	Mi. 9. 3 15. 8		24 25		6 4	1 7	16 18		0-10 4. 1 5. 2		In. .0	
Alaska  lethel	28 32 75 20 331 1, 718 132 455 80 22	5	31 32 44 63 21	29, 81 29, 46 28, 11 29, 77	29. 74 30. 01 29. 83 29. 86 29. 92 29. 94 30. 04		18.6 5.5 38.6 2.4 12.2 3.4 25.8 9.4 29.8 12.8	+7. 2 +10. 6	44 42 48 38 43	15 22 16 16 16	21 15 34 19 37	-32 -19 23 -33 -35 -32 0 -30 11 -20	13 27 3 27 29	-6 3 -8 18 0 23	36 16 41 47 36 27 39	17 4 83 2 11 2 22 8 28 12	90 79 91 87	. 28 3. 05 . 19 . 47 2. 10 1. 76	+1.3	12 12 12 12 12 12 12 12 12 12 12 12 12 1	4.7	ne. ne. se. nw.	41 61 33 34 43 46 31 56	SW. SW. SW.	20 18 10 20 16 19 10 18	4 2 2 4 0 5 3 2 6 3	5 10 5 5 3 13 4 10 6 5	17 22 20 26 11 22 17	7.0 8.1 7.7 8.8 6.4 8.2 7.7 7.3	3.7 38.0 3.4 7.4 21.4	17. 5 .0 7. 9 35. 4 9. 1 9. 0 21. 7	
Hawaiian Islands																					1											
lonolulu	38	86	100	29, 94	29, 96		71. 5	+.7	80	4	77	62	12	66	16			2.8	-1.0	16	7.8	ne.	27	sw.	11	7	15	7	5. 5	.0	.0	

#### LATE REPORTS FOR JANUARY 1944

Alanka											1												1	1		
Bethel	28 32 75 20 331	7 5 69 5 5	31 32 90 31 31	29, 33 29, 58 29, 72 29, 57 29, 09	29, 37 29, 61 29, 74 29, 59 29, 40	-2.4 39.6 -8.6	-6.2 -4.8 +6.0	36 21 51 27 36	8 9 10 8	9 - 2 - 44 -1 -	-44 -23 27 -43 -52	28 - 25 - 2 3 30 -1 29 -1	8 38 7 18 6 14 8 26 9 44	0 -4 35 -11 -9	86 87	. 39 . 58 8. 89 . 14 . 32 . 26	5 2 +4.9 4 6	11	se. ne.	30 se.	11	7 8 1 8 6	1	29 9.	8 4.7 16.5 0 5.8 10.2 4 5.6 .0 0 1.9 8.2 4 8.9 38.5	0 0 0

#### SEVERE LOCAL STORMS, FEBRUARY 1944

(Compiled by Mary O. Souder)

[The table herewith contains such data as has been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the United States Meteorological Yearbook!

			Width		Value of		
Place	Date	Time	of path, yards	Loss of life	property destroyed	Character of storm	Remarks
Hugo, Okla	3	7:30 p. m	100	0	\$100, 000- \$200, 000	Tornado	\$35,000 damage to the buildings of the Goodland Indian School 109 homes and business houses slightly damaged or totally demolished. Unestimated damage to shade trees and timber.
Barnesville, Ga	9	a. m	*******	0	20,000	do	3 houses demolished and considerable damage to buildings trees, and communication lines.
South Dakota	9-10	***************************************	*******		********	Blowing snow	High, gusty wind, near zero temperatures and blowing snow hampered motor traffic in all sections. Numerous schools
Nebraska, entire State	10		******			Snow and wind	closed because of blocked highways.  Stockmen and travelers appear to have been well-prepared for the storm, keeping losses at a minimum. Amount of
Howell, Mich San Marcos, Tex Abilene, Tex	22 24 24	p, m	13		5,000	Electrical	damage not estimated. Much damage to windows and electrical installations. Damage to buildings and gardens. Roofs of school and farm buildings damaged; estimate no
Hondo, Tez Cedar Bluffs, Nebr	24 25	10-11 p. m	880 440	*******	2, 000 1, 800	Tornadic wind, rain and hail.	given. Buildings damaged; loss in oats. Small buildings blown over or damaged. Cloud started as a funnel, but seemed to break with other clouds forming From the debris it was seen that wind blew in 2 directions length of storm, 2 miles.
Nebraska, northwest and north-central portions.	25	p. m				Snow and wind	Strong wind with light to heavy snow in northwestern Ne braska with very heavy snow and strong winds in north central portion. Woman died from exposure.
Cherokee, Forsyth, and Dawson Counties, Ga.		4.0000000000000000000000000000000000000			30, 000	Tornado	Many small buildings destroyed including a 6,800-chicker hatchery; 15 homes damaged.
Emhouse, Tex	28	3:30 a. m	1 34-3		15, 000	Straight-line-wind	Damage to buildings; loss in unpicked cotton.

<sup>1</sup> Miles instead of yards.

Data are airport records.

Barometric data (adjusted to old city elevation) and hygrometric data from airport;
otherwise city office records.

Observations taken bihourly.

Pressure (adjusted to old city elevation) temperature and hygrometric data from airport;
otherwise city office records.

Temperature and precipitation from city office records, other data from airport.

Note.—Except as indicated by notes 1, 2, 4, and 5 data in table are city office records

#### SOLAR RADIATION AND SUNSPOT DATA FOR FEBRUARY 1944

[Solar Radiation Investigations Section, I. F. Hand in charge]

#### SOLAR RADIATION OBSERVATIONS

Explanations of the tables and references to descriptions of instruments, stations, and methods of observation, and to summaries of data, are given in the January 1942 Review, page 20; a list of pyrheliometric stations is also given in the Review for January 1943, page 12, and in January 1944, page 45.

Table 1.—Solar radiation intensities during February 1944
[Gram-calories per minute per square centimeter of normal surface]

				Mad	ison, W	Vis.					
					Sun's z	enith d	listano	0			
	7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.00	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
Date	75th mer.					ir mas	is				Local mean
	time		<b>A.</b>	м.				P.	м.		solar
	e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	e.
Feb. 1	mb. 2.34	cal. 1.03	cal. 1. 10	cal. 1.06	cal.	cal.	cal.	cal.	cal.	cal.	mb. 2.24
Feb. 3	5. 59	. 47	. 57	. 69	1.04		1. 11	0.74			6.64
Feb. 9	1.66	. 99	1.11	1. 21	1.37	1.54					1.73
Feb. 12	. 98	. 84	1.03	1.13	1.35	1. 57	1.39				1.49
Feb. 15	1.73			1.16	1. 31	1.53	1.30				2.03
Feb. 18	1.08	1.01	1.11	1. 21	1.40	1. 57	1.39				1.49
Feb. 19	1.08	. 87	. 98	1.04	7 14	1 00				*****	2. 24
Feb. 21	2.88	.76	1.04	1.08	1. 14	1. 20 1. 52	1. 22				3.83
Feb. 24	3. 00	. 41	.00	. 91	1. 43	1. 02	1. 20	*****			9. 00
Means Departures		. 80 09	. 95 08	1.06	1. 26	1. 49	1. 28	(.74)			
	1		1	1	1	1	1				1

TABLE 1.—Solar radiation intensities during February 1944—Con.

			Line	oin, Ne	br.					
			1	Sun's z	enith d	listance	,			
7:30 a. m.	78.7°	75.7°	70.7°	60.0°	0.00	60.0°	70.7°	75.7°	78.7°	1:30 p. m.
75th				A	ir mass	3				Local
time		Α.	м.				P.	М,		solar
e.	5.0	4.0	3.0	2.0	*1.0	2.0	3.0	4.0	5.0	0.
mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb. 5.8
4. 40	1.05	1. 16	1. 18	1.36		1.34	1.16	1.03		5. 33
4.18	. 77	. 94			1 50	1 27	1 24	1 07	0.07	2.3
			1. 10	1. 00						3. 6
2.03			1.02	1. 22	1.38	1. 22	1.03	. 88	.77	3.4
										5. 3
3.66	******	. 57	.75	. 94	1. 38	1. 16	. 100	.77	. 62	6.3
	0, 99 +. 08	. 97 05	1. 02 14	1. 24 11	1. 40 11	1. 23 11	1.11 11	. 94 07	79 12	****
	•	Al	buque	que, N	. Mex					-
										7:30
										p. m.
	0.00	1 07	1. 10	1. 10	*****					5.0
			1. 22			1. 00	A. ML			5.0
5. 32						1. 27				5. 0
5.83	. 92		1.06	1.33		1.38				4. 6
						*****				3. 3
	1.06	1.15	1. 25	1.41	*****	1 94	1 00			2.8
	*****			*****						3.6
			*****							3.8
3. 32	. 94	1.04	1. 13	1, 22		1. 31	. 91			7.7
3.83		1. 16	1. 19	1.32						7.1
						9 49	9 658	I A OR		R 80
4. 40	1. 01	1.11	1. 21	1.38		1.41	1. 25	0. 97		5. 5
	8. m. 75th mer. 1. 15	a. m. 78.7  75th mer. time  e. 5.0  mb. cal. 3.49 1.16 4.40 1.05 4.18 .77 .92 2.71 2.03 3.66	78th mer. time	7.30 78.7° 75.7° 70.7°  75th mer. time	Sun's z  7:30 a. m. 78.7° 75.7° 70.7° 60.0°  75th	7:30 a. m. 78.7° 75.7° 70.7° 60.0° 0.0°  75th mer. time  A. M.  e. 5.0 4.0 3.0 2.0 *1.0  mb. cal. cal. cal. cal. cal. cal. 3.49 1.16 1.22 1.22 1.31 4.40 1.05 1.16 1.18 1.36 1.31 1.92 1.13 1.31 1.92 1.13 1.31 1.92 1.13 1.35 1.58 1.36 1.36 1.36 1.36 1.36 1.36 1.36 1.36	Sun's zenith distance  7:30 a. m. 78.7° 75.7° 70.7° 60.0° 0.0° 00.0°  75th	Sun's zenith distance  7:30 a. m. 78.7° 75.7° 70.7° 60.0° 0.0° 60.0° 70.7°  75th	Sun's zenith distance  7:30 a. m. 78.7° 75.7° 70.7° 60.0° 0.0° 00.0° 70.7° 75.7°  75th	Sun's zenith distance

<sup>\*</sup>Extrapolated.

+4 -37 +28 -48 +16 -7

Table 2.—Daily totals and weekly means of solar radiation (direct+diffuse) received on a horizontal surface

[Gram-calories per square centimeter] East Ware-ham, Mass. State Col-lege, Pa. New Or-leans, La. Blue Hill, Mass. Los An-Wash- Madi-Nash-ville, Tenn. La Jolla, Calif. River-Put-in-Ithaca, N. Y. Davis, Calif. Fresno Calif. bia, Mo. D. C. son, Wis. side, Calif. port, R. I. Bay, Ohio cal. 275 216 166 261 133 cal. 165 284 251 187 307 297 291 cal.
48
148
208
100
10
78
268 cal. 164 263 130 277 92 112 139 cal. 132 258 263 268 280 58 143 cal. cal. 158 259 231 297 95 217 305 cal. 197 207 268 277 184 78 225 cal. 316 286 266 331 cal. 208 162 188 169 317 122 260 cal. 44 248 47 303 76 56 230 cal. 139 222 192 144 243 237 223 cal. 142 421 428 464 347 179 494 242 204 305 255 293 96 206 242 337 75 308 253 44 168 216 57 217 cal. January 29 January 30 January 31 February 1 February 2 244 304 43 335 276 118 303 199 226 204 108 51 256 79 42 91 241 58 310 154 41 137 227 240 275 311 210 333 318 241  $\frac{328}{239}$ +17 +39 +64 -72 -33 +26 +37 -32 +32 -19 +17 +1 +38 2'9 +33 -38 +96 +13 +18 February 5... February 6... February 7... February 9... February 10. February 11. 146 238 305 73 251 20 228 105 199 194 54 158 241 82 305 85 289 38 168 119 157 140 322 124 324 359 129 358 393 403 344 322 70 387 412 395 141 51 264 96 255 64 261 70 305 264 325 31 259 31 233 273 76 66 162 261 310 184 340 66 296 251 134 296 101 231 330 288 122 83 164 424 242 305 167 259 368 369 327 277 43 351 90 26 225 256 356 254 323 55 153 204 335 164 327 41 309 231 245 364 379 375 200 155 258 109 228 25 358 317 95 411 391 396 313 73 347 24 336 -- 19 --4 -26 -5 -10 -25 +18 +9 -37 +38 +16 -37 +5 2:0 +79 22) -6 +37 +10 February 12. February 13. February 14. February 16. February 17. February 17. 406 320 366 407 257 202 207 146 257 332 320 358 64 335 217 37 232 206 174 345 201 86 386 202 296 168 334 389 326 235 91 259 184 122 206 338 121 284 154 83 148 383 249 368 399 375 399 174 234 215 250 73 364 316 178 236 173 228 276 337 21 339 260 27 88 387 308 425 417 175 424 385 279 254 208 267 261 373 325 423 392 352 408 373 266 257 212 182 316 322 115 111 230 79 228 378 75 287 227 134 350 371 249 297 228 160 320 375 334 407 364 409 377 -5 +24 -28 -5 -7 -30 +61 +9 **2** +26 -11 +59 February 19. February 20. February 21. February 22. February 23. 85 318 21 397 357 357 226 302 21 186 386 71 216 289 31 177 333 77 121 314 42 276 270 347 285 343 94 140 340 404 329 360 116 100 326 421 383 67 347 411 398 194 83 54 235 423 358 416 300 91 367 325 400 126 259 292 62 82 287 334 119 180 89 399 253 78 389 213 184 357 318 190 111 351 174 180 216 225 72 213 36 188 176 342 326 382 98 120 339 427 27 58 57 260 393 317 250 320 34 184 324 351 February 24 February 25

#### ACCUMULATED DEPARTURES ON FEBRUARY 25, 1944

+108 

-175 +147 +1120 -1505 +238 +16237 +343 -406952 +69349 +1932 +315	49 +1932 +315 +371	+371
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### POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR FEBRUARY 1944

Communicated by Capt. J. F. Hellweg, U. S. N. (Ret.), Superintendent, U. S. Naval Observatory.] All measurements and spot counts were made at the Naval Observatory from plates taken at the observatories indicated. Difference in longitude is measured from the central meridian, positive toward the west. Latitude is positive toward the north. Areas are corrected for foreshortening and expressed in millionths of Sun's hemisphere. For each day, under longitude, latitude, area of spot or group, and spot count, are included assumed longitude of center of the disk, total area of spots and groups and total spot count.

			3.2		Heliog	raphic					
Date	sta a	rn nd- rd me	Mount Wilson group No.	Dif- fer- ence in longi- tude	Lon- gi- tude	Lati- tude	Dis- tance from cen- ter of disk	Area of spot or group	Spot count	Plate qual- ity	Observatory
1944 Feb. 1	h 10	m 55	7634	+55	334	+10	59	16	1	G	Mt. Wilson.
Feb. 2	13	15	******			(-6)		16	- 1	P	U. S. Naval.
Feb. 3	13	2			Nos	pots				F	Do.
Feb. 4	10	34			Nos	pots				a	Do.
Feb. 5	11	10			Nos	pots				F	Do.
Feb. 6	13	38	******		Nos	pots				F	Do.
Feb. 7	10	9			Nos	pots				F	Do.
Feb. 8	10	33			Nos	pots				F	Do.
Feb. 9					Nos	pots					Mt. Wilson.
Feb. 10	10	47			Nos	pots				G	U. S. Naval.
Feb. 11		****	*******		No s	pots				*****	Mt. Wilson.
Feb. 12	10	36			Nos	pots				G	U. S. Naval.
Feb. 13	11	7			Nos	pots			*****	G	Do.
Feb. 14				*****	No s	pots					Mt. Wilson.
Feb. 15	10	30			Nos	pots				G	U. S. Naval.
Feb. 16	10	49	******		Nos	pots				F	Do.
Feb. 18	10	36			Nos	pots			*****	VG	Do.
Feb. 19	10	39	******		Nos	pots				P	Do.
Feb. 21	10	41			Nos	pots				VG	Do.
Feb. 23	10	32			Nos	pots				. G	Do.
Feb. 24	11	2			Nos	pots				G	Do.

					Helio	graphic					
Date	sta a	nd- rd me	Mount Wilson group No.	Dif- fer- ence in longi- tude	Lon- gi- tude	Lati- tude	Dis- tance from cen- ter of disk	Area of spot or group	Spot count	Plate qual- ity	Observatory
1944 Feb. 25	h 10	m 45		0	o No	spots	0	222842	*****	G	U. S. Naval
Feb. 27	15	33			No	spots	*****	*****	*****	F	Do.
Feb. 28	10	30			No	spots				F	Do.
Feb. 29					No	spots	*****		*****		Mt. Wilson.

Mean daily area for 25 days=1.

VG=very good; G=good; F=fair; P=poor.

### PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR JANUARY 1944

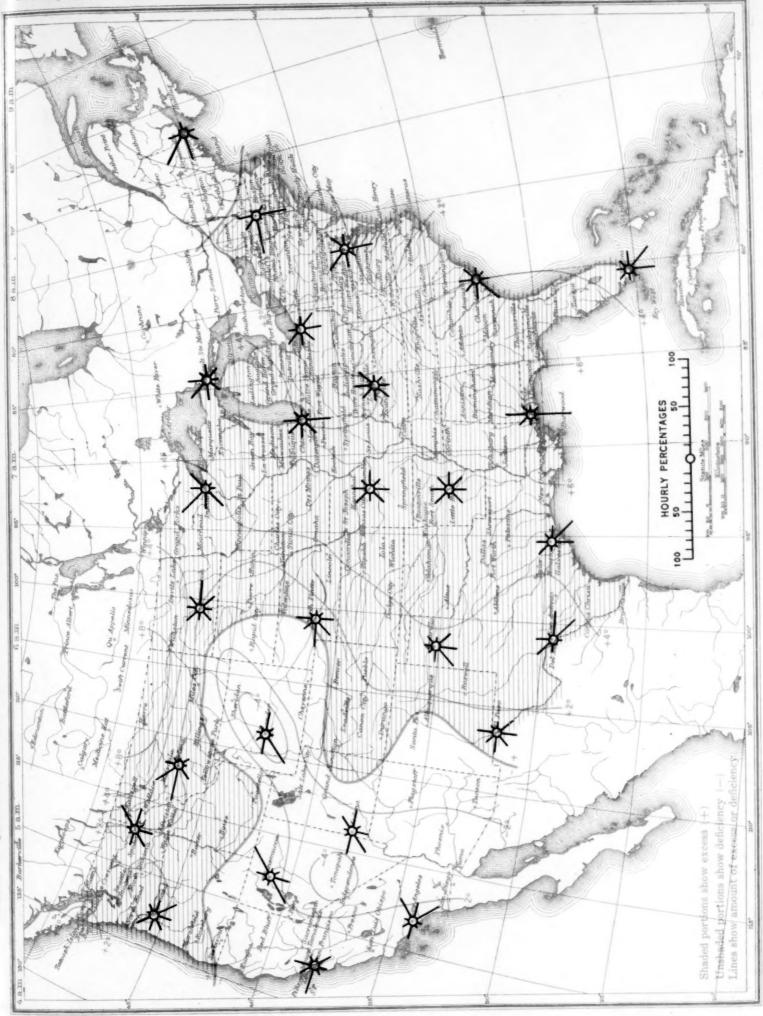
[Based on observations at Zurich (or Locarno as indicated by asterisk). Data furnished through the courtesy of Prof. W. Brunner, Swiss Federal Observatory, Zurich, Switzerland]

January 1944	Relative numbers	January 1944	Relative numbers	January 1944	Relative numbers
1	7	11	*0	21	(
2	*0	12	*0	22	d8
3	0	13	0	23	8
4	0	14	0	24	8
5	0	15	0	25	8
6	0	16	0	26	8
7	0	17	*0	27	13
8	0	18	*0	28	18
9	*0	19	*0	29	19
10	*0	20	Ö	30	9
				31	8

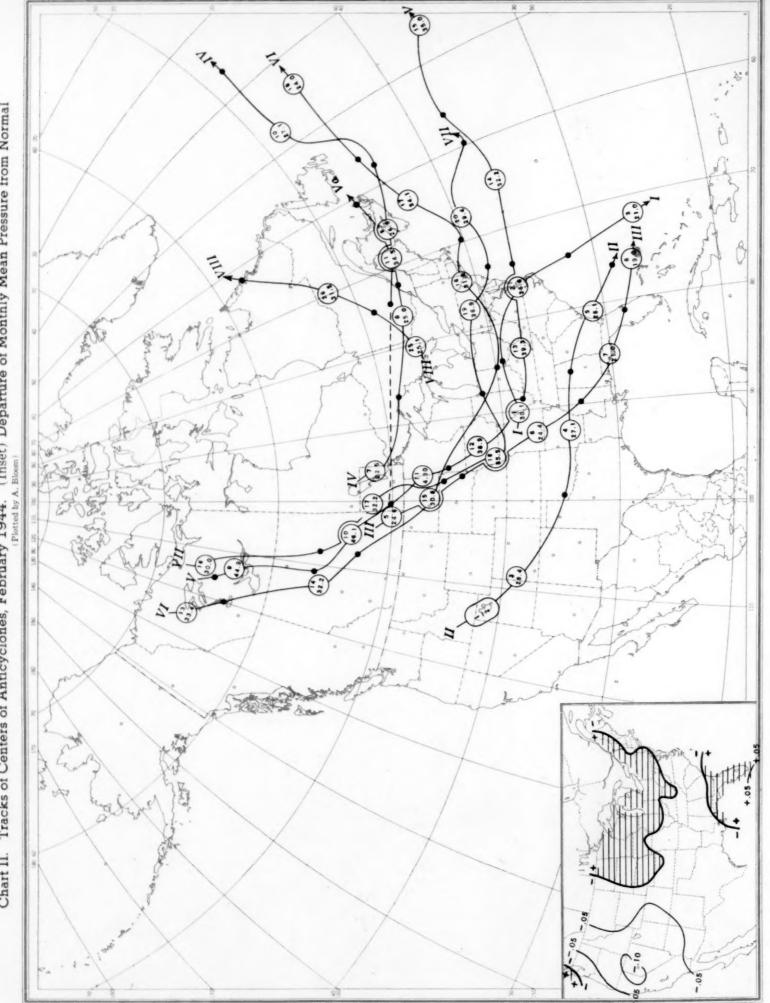
Mean, 31 days=3.7

\*=Observed at Arosa or Locarno. d=Entrance of a large or average-sized center of activity on the east limb.

Chart I. Departure (°F.) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, February 1944



(Inset) Departure of Monthly Mean Pressure from Normal Chart II. Tracks of Centers of Anticyclones, February 1944.



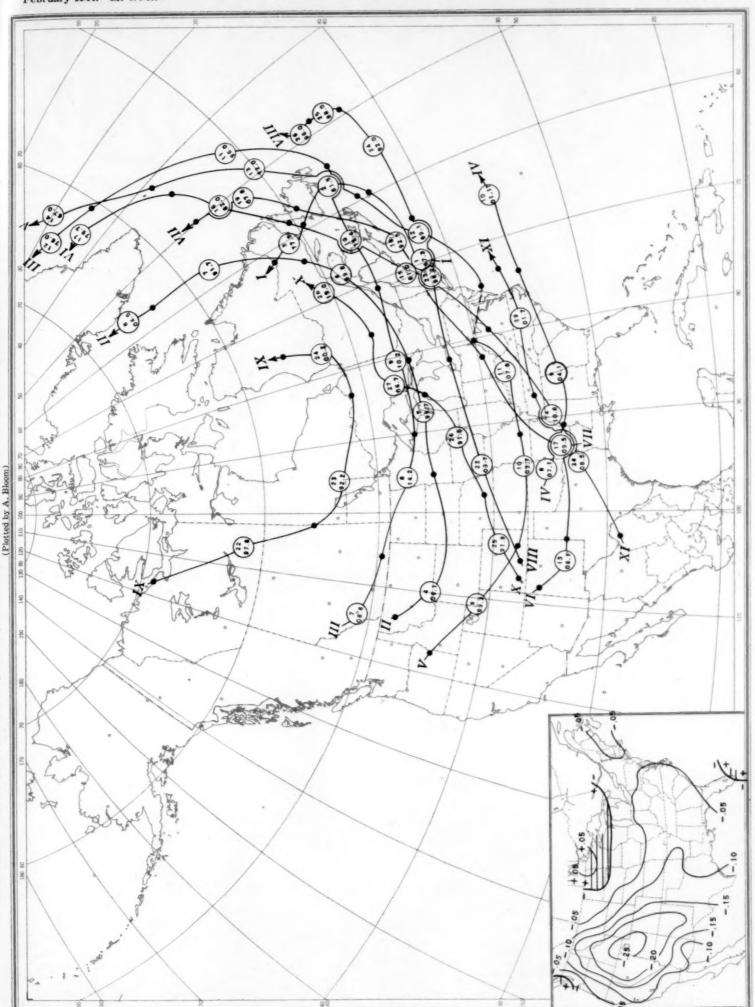
Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Chart III Tracks of Centers of Cyclones February 1944.

(Inset) Change in Mean Pressure from Preceding Month

(Inset) Change in Mean Pressure from Preceding Month Chart III. Tracks of Centers of Cyclones, February 1944.

Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)



Circle indicates position of cyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of cyclone at 7:30 p. m. (75th meridian time).

40 to 50 p 50 to 60 g

Chart IV. Percentage of Clear Sky Between Sunrise and Sunset, February 1944

Scale of Shades Over 6 inches 4 to 6 inches 2 to 4 inches 1 to 2 inches 0 to 1 inch

(Inset) Departure of Precipitation from Normal Chart V. Total Precipitation, Inches, February 1944.

Chart VI. Isobars at Sea Level and Isotherms at Surface; Prevailing Winds, February 1944

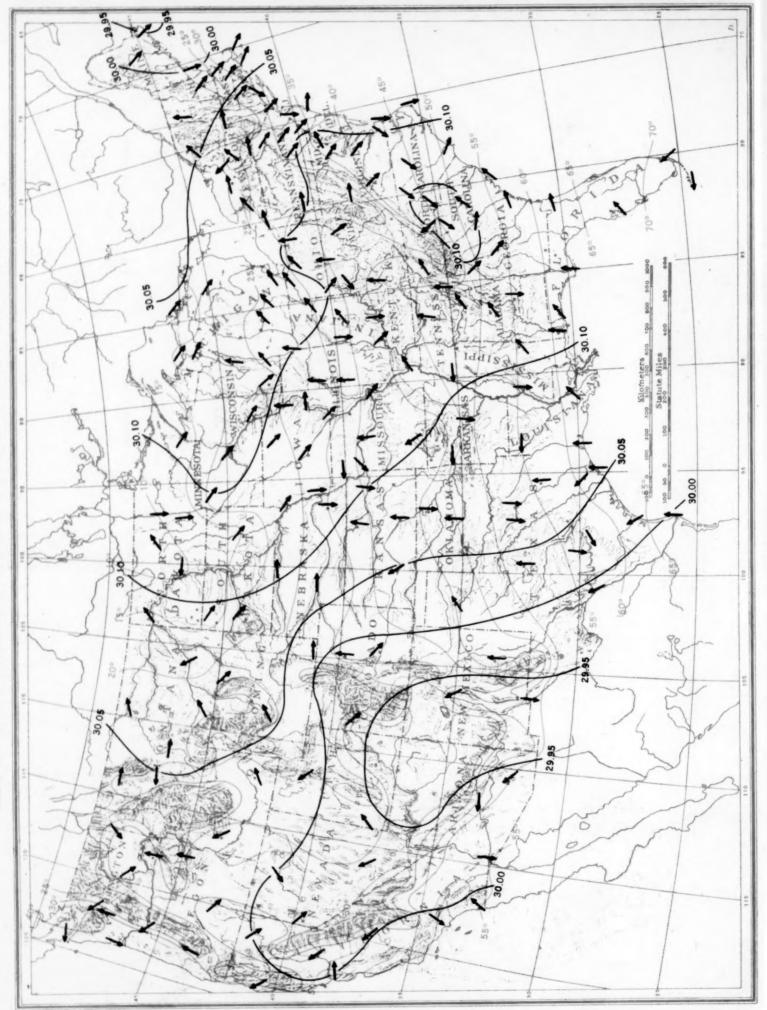


Chart VII. Total Snowfall, Inches, February 1944. (Inset) Depth of Snow on the Ground at 7:30 p. m., Monday, February 28, 1944